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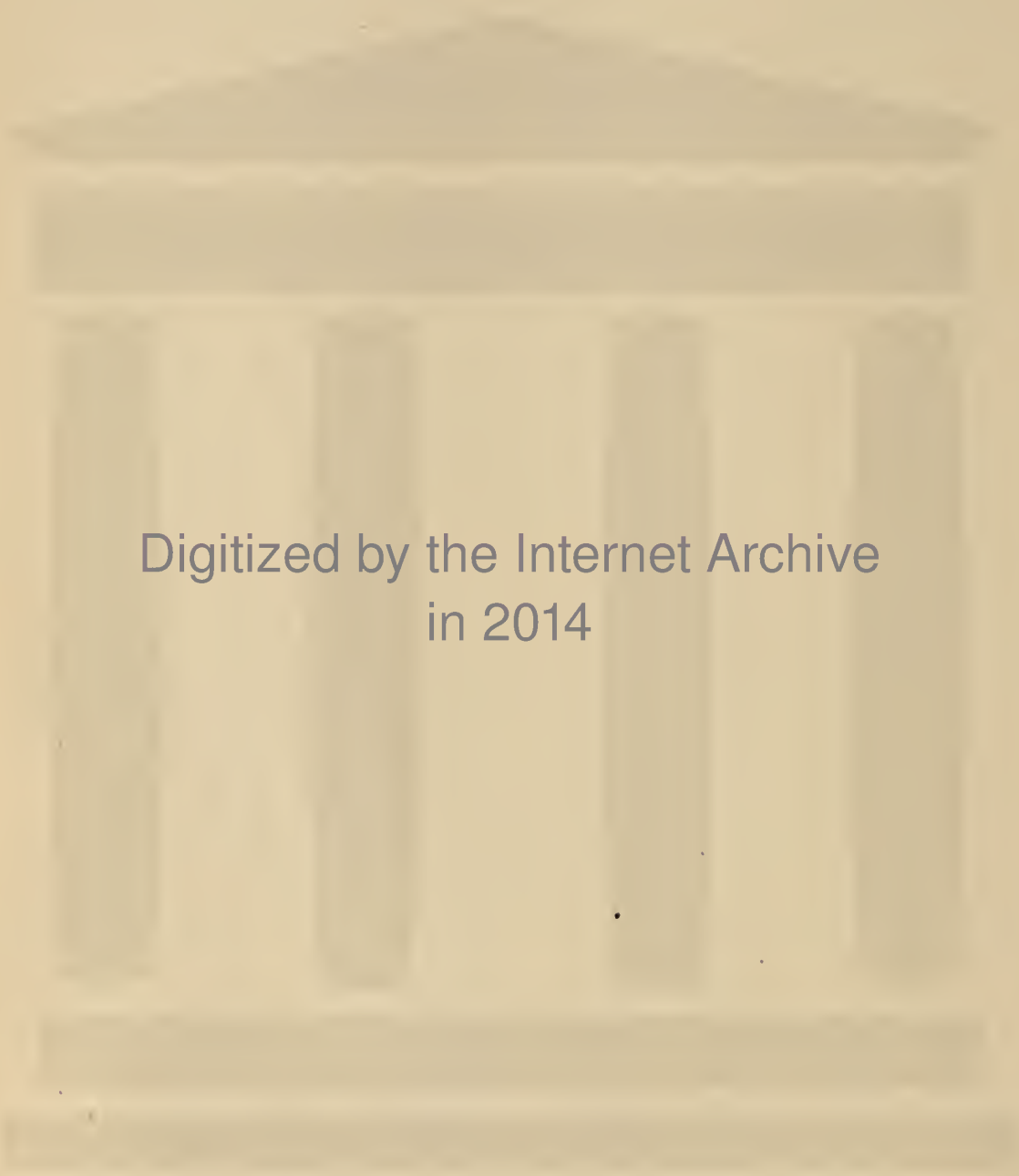

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THE

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EDITED BY

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J. M. MAURY, M.D.
M. GOLTMAN, M.D.
E. C. ELLETT, M D.
S. E. RICE, M.D.

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CONTRIBUTORS TO VOLUME I.

BALDY, J. M.....Philadelphia, Pa.
BEYEA, H. D.....Philadelphia, Pa.
BUCHANAN, J. J.....Pittsburg, Pa.
BUFORD, G. G.....Memphis, Tenn.
BURR, C. W.....Philadelphia, Pa.
DUDLEY, E. C.....Chicago, Ill.
ELLETT, E. C.....Memphis, Tenn.
ESTES, W. L.....South Bethlehem, Pa.
FARRINGTON, P. M.....Memphis, Tenn.
GOLDSTEIN, M. A.....St. Louis, Mo.
GOLTMAN, M.....Memphis, Tenn.
HAPPEL, T. J.....Trenton, Tenn.
HARE, H. A.....Philadelphia, Pa.
JANVRIN, J. E.....New York, N. Y.
KELLY, A. O. J.....Philadelphia, Pa.
KRAUSS, W.....Memphis, Tenn.
MAPES, C. C.....Louisville, Ky.
MAURY, R. B.....Memphis, Tenn.
MULLEN, JOS.....Houston, Tex.
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TULEY, H. E.....Louisville, Ky.
VENN, J. H.....Memphis, Tenn.
VINEBERG, H. N.....New York, N. Y.
WALKER, J. E.....Hornellsville, N. Y.
WARREN, S. S.....Washington, D. C.
WELLS, WM. H.....Philadelphia, Pa.
WILSON, F. C.....Louisville, Ky.
ZENTMAYER, W.....Philadelphia, Pa.

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THE

MEMPHIS LANCET.

VOLUME I. JULY, 1898. No. 1.

ORIGINAL ARTICLES.

SURGICAL SHOCK.

BY W. L. ESTES, M.D.

Director and Physician and Surgeon-in-Chief of St. Luke's Hospital, S. Bethlehem, Pa.

In announcing my subject as *surgical* shock I am conceding for a time proper deference to the older teaching, and my loyal respect for the sturdy pioneers who blazed the ways in surgery and medicine, and made it possible for us lesser pilgrims, from vantage ground obtained by their labors and sweat, to view further vistas and learn better views of the sunlit plain whose full extent and related detail none will ever fully see or know until he reaches the "Beulah Land," and no longer "sees as through a glass—darkly."

After many years spent in active hospital work, having had frequent opportunities for seeing men, women and children in almost every conceivable stage of physical condition resulting from slight or grave injuries, whether the result of accidental cause or following the deliberate dissection of a surgeon's knife, I found the ideas of so-called "shock" which had so painstakingly been implanted in my mind in early student life, and which were the product of the accepted dogmas of the best surgical minds, were gradually undergoing most decided modifications. A long series of observations was beginning to make me doubt that the accepted teaching of a "*reflex nervous action*," as the etiology of all conditions of

shock, was tenable. Continued observation, experimentation and study finally convinced me that the extremely weak conditions usually found after severe injuries had *two etiological factors chiefly*. It might be produced by the one or the other, or by a combination of both, namely: first, psychical effect, and second, acute anæmia. The first I called primary, and the second secondary shock, and especially dangerous.

When in 1887 I first announced this doctrine, it was considered by the "conservatives" in medicine as a rank vagary and treated with scant courtesy. Since then I have had the satisfaction of having the major proposition accepted, adopted, and advocated by many of the most progressive and thoughtful surgeons. In this sketchy paper I wish to go a step further and argue that shock is essentially a condition of *cerebral anæmia*, occasioned by (1) an intense (either great, that is, diffuse and large, or small, that is, concentrated and very sharp) psychical effect, or (2) by acute general anæmia (which may be the result of actual loss of blood or sudden withdrawal of blood from the brain), and that the conditions of so-called syncope and *concussion of the brain*, are but phases of, and are identical with, shock. [Dr. Hare has recently made a suggestion to the effect that chloroform poisoning (*Med. News*, March 16, 1896) is due to inhibitory vasomotor disturbance.] Treated in this broad sense I must drop the qualifying adjective, as shock may be occasioned by many influences not at all surgical.

Pathology. The actual post-mortem conditions have rarely been observed, as comparatively few people die of uncomplicated shock. In fatal cases, however, two phenomena are practically constant. (1) the heart is arrested in diastole, and (2) the brain contains very little blood.

The classical experiment, quoted by Dr. Mansell Moullin in *Ashurst's System of Surgery*, vol. 1, page 366, of Goltz, namely, the frog suspended vertically with his legs downward, his head exposed, when struck upon the abdomen with some violence the blow produced a sudden stoppage of the heart, may be susceptible of another explanation than purely reflex influence, it seems to me. The poor little brute was not anæsthetized in the first place; the terror inspired by the dreadful operation was intensified by the painful and unnatural suspension; he could see perfectly well what was going on, and of course saw the object which inflicted the blow

before it reached him; this added terror was sufficient, and doubtless did stop the heart before the violence actually reached the abdomen. This was a case of psychical shock pure and simple. I saw this experiment attempted in a modified way on a dog last summer. The dog was chloroformed, its abdomen opened, the intestines drawn out, and after being exposed for some time were struck a sharp blow by the hand of the experimenter. There was no appreciable shock; the heart's beats remained apparently the same; the psychical element was removed by the anæsthetic; the *reflex nervous element alone* produced no such effect.

The further explanation of Goltz fits the idea exactly, however. He says, after stating that the heart's beats begun again after a little while: * * "But there was a remarkable difference between its appearance now and its appearance before the blow had been given. Instead of becoming filled with blood during each diastole, and assuming a deep red color in consequence, it remained quite pale and empty, and, although it contracted vigorously, the circulation remained stopped, for the heart had no blood to propel. The cause of this was not far to seek; the frog was hanging with its legs downward and the upper part of the vena cava was empty. The veins of the intestines generally kept in a state of semi-contraction by the vasomotor nerves had been relaxed, and the blood which would have filled them completely up to the heart was not sufficient, so that they were only half full." In other words, a violent psychical disturbance had been produced which, as it usually does, had caused a general relaxation of the vasomotor, as well as other muscular systems, and the enormous aggregation of capillaries in the mesenteries and abdominal organs had received and retained the blood, so that the heart was quite deprived of blood and the brain also could get none.

Another argument against the theory of reflex nervous production of shock is the fact that as a rule a patient is in a condition of *anæsthesia* (sometimes almost complete) before the physical injury takes place, through the prompt agency of terror, despair or hopelessness, or whatever one thinks best to call it. In other words, psychical shock *precedes* the actual injury, and by its anæsthetic effect takes away the reflex action as well as all appreciation of pain. A man is caught on the railroad track; he sees the locomotive coming down upon him; he knows he cannot escape; a sense

of utter hopelessness possesses him, and with it unconsciousness and abolition of all nervous action for the time. He does not feel the blow of the machine nor the crushing of the ponderous wheels. I have asked men time after time, Did you have any pain, or know when you were struck? the invariable answer has been—No.

Again, an individual falls a long distance, or is precipitated from a height; he sometimes knows (but *very* rarely) when he strikes the bottom, and never has any pain from the injury; and yet these accidents furnish most dreadful injuries of a crushing kind. Dr. Helm of Zurich, Switzerland, personally investigated 2000 cases of falls in which the individual survived the fall, and every individual said he experienced no sense of pain whatever when his body reached the earth below. Some describe their sensations in going down as rather pleasurable; visions and dreams similar to those in the state of anæsthesia from the ordinary narcotics and anæsthetics were described by others; the greater number, however, lost all consciousness before they struck. This is the condition I call *psychical shock*, and I hold this condition precedes most severe injuries which are attended with severe shock. Take away the *conditions* which produce this shock, and no shock in the usual acceptation of the term will occur. It is a well-known fact that men and women injured during their sleep do not suffer from any primary shock.

In an experience of eighteen years in active hospital work, I have never yet seen any shock from an operation in anæsthesia when the patient was thoroughly calm and hopeful, unless severe hemorrhage had taken place, or an overdose of the anæsthetic had been given. This psychical shock is retroactive; that is to say, an individual while asleep may have a severe injury without any immediate shock, but after grasping, through sight, the details of a terrible wreck, and realizing that he passed through such blood-curdling situations, he may be seized with post facto psychical shock, lose consciousness, and fall into the typical condition of shock. This explains some of the so-called *secondary* cases of shock of the older writers. It is well known also that this psychical shock resulting in anticipation of a fatal or very terrible injury may be disastrous, may itself produce death. The familiar illustration of the case of the janitor who was convinced by some students that he was to be beheaded, who, after being taken down into the crypt

of the college building blindfolded, and after much mummery had his head laid upon what he thought was a block, was struck a gentle blow with a moist towel, and died instantly, will serve as an example of this. Another case, and they might be multiplied far beyond the reader's patience, was that of a French criminal who saw a companion executed by having a blood vessel opened and being allowed to bleed to death, was told that he should die the same way, was blindfolded, a mere scratch made upon his skin, and some warm water allowed to trickle over and from the scratched limb. He also died promptly. The foregoing cases illustrate the effect of diffuse and large impression in the sense of having excessively terrifying and engrossing causes.

Another class of cases results from minor causes of a particularly sharp and concentrated kind. Sharp and concentrated, not from the nature of the peripheral effect, but the character of its excitation on the brain itself. For instance, I have had a strong young man go into a faint from the little operation of vaccination which he was watching me do on himself; students frequently faint at the sight of minor operations; impressionable people faint from the effects of some penetrating odors, as of some strong perfumes, etc., etc. These last cases have all the classical symptoms of shock, and belong as truly to psychical shock as do any of the others.

Some writers have for years *suggested* that concussions of the brain were instances of true so-called surgical shock. Moullin, in the 1893 edition of his Treatise on Surgery, says: "Concussion of the brain may be regarded as a form of shock." Duret explained how this may occur, and Dr. Roswell Park, in an address before the 1896 meeting of the New York State Association of Railway Surgeons, took up the idea, endorsed and amplified it. Duret's theory was that when the cranial walls were struck a violent blow, the elasticity of the bones was such that there was a "cone of depression produced under the blow, and this imparted a wave to the cerebro-spinal fluid which drove it out of the lateral and third ventricles through the narrow aqueduct of Sylvius against the restiform bodies, and this irritation produced anæmia of the brain." A better explanation would be the effect on the floor of the fourth ventricle, which the wave directly strikes, and the irritation of the origin of the inhibitory nerve of the heart, the pneumogastric, and

through this agency anæmia of the brain would be produced. The symptoms and phenomena of concussion are identical with those of ordinary shock, and can be properly understood and appreciated under no other hypothesis. It is not molecular disturbance of the nerve cells primarily, nor miliary hemorrhages, but the direct effect of the agitation of the cerebro-spinal fluid which will account for the phenomena.

Shock from Acute Anæmia — that is, from Loss of Blood. Shock from loss of blood I contend is *the* true surgical shock. Systematic surgical writers from the time of Erichsen to the present day have recognized and usually mentioned the fact that the condition produced by hemorrhage is so similar to what they called shock that very careful discrimination was necessary to differentiate between the two. Indeed the physical states are recognized as so nearly the same that Martin and Hare have suggested that the hemoglobinometer be used to determine, arguing that in shock the hemoglobin will be unaltered, while in cases of hemorrhage the hemoglobin will be greatly diminished. As all observers agree that the post mortem changes are not characteristic, and that there are no known signs which are absolutely pathognomonic, I contend that the true way of determining the matter is to be guided by the *clinical* signs and symptoms; if these are identical, or so nearly so that the several states cannot be determined by the clinical pictures, and if the same treatment serves to restore the proper reaction in each case, it is an unwarranted refinement to make three or four different names for what is practically the same state. The whole matter seems to me to depend upon whether cerebral anemia be the prevailing and essential feature of these several conditions. Whether this condition be produced by a mental condition, a blow upon the head, or rapid and immoderate loss of blood, it is generally conceded that the effect is obtained through the vasomotor nerves; and as these several agencies are known especially to affect the vasomotor center, the medulla oblongata and the center of circulation, i.e., the heart, through its inhibitory nerve, the pneumogastric, are they all not the same condition? To complete this reasoning we would necessarily have to show that slowing the action of the heart and at the same time markedly weakening its contractions will always produce cerebral anæmia. In order to show this we must find some way of disposing of the volume of blood in these conditions when

there is no actual loss from the system. Goltz' classical experiment shows this most conclusively, the capillaries and venous system of the abdomen, which furnish the enormous receptacle for the blood, when thoroughly dilated, receive and hold the blood when the heart has been suddenly weakened and partially paralyzed. This quality of the capillaries of the mesentery is now recognized by therapeutists. Bartholow, for instance, recommends the use of veratrum viride to cause dilatation of the mesenteric capillaries and so to "bleed" a patient into his own mesentery in order to relieve congestion elsewhere. I cannot, however, pursue this reasoning in extenso. I must simply suggest the arguments, as this paper is already getting too long.

No one can deny that rapid and considerable loss of blood produces cerebral anæmia. In my paper presenting acute anæmia as the essential cause and condition in true surgical shock, I made the assertion which I have reiterated in this paper, namely, that in no case of deliberate operation had I seen surgical shock unless there had been considerable hemorrhage or an overdose of the anæsthetic. I gave certain statistics to show that in fatal cases after modern amputations death occurred almost always within forty-eight hours after the operation, that the death was always from so-called shock or exhaustion. I gave statistics to show further that in my own operations, as soon as especial care was taken and means provided for the prevention of hemorrhage immediately after injury, and a method of operation pursued which prevented loss of blood during the operation, that in a series of 178 single major amputations the mortality rate was reduced to 2.87 per cent. against a former rate of 7.89 per cent. mortality by the older methods.

Since publishing the above statistics in another form in 1894, I have had 90 single major amputations with 2 deaths, or 2.22 per cent. mortality, and both of these deaths doubtless occurred because the amputations were done before the patient had sufficiently recovered from the acute anæmia. There were 18 double synchronous amputations and 1 death, 5.55 per cent. of mortality, and 2 triple synchronous amputations and no death. I can conceive of no better argument than these statistics to prove that surgical shock does not affect the mortality rates when loss of blood is prevented, and as in all these cases there was an absence of shock, unless some hemorrhage had taken place, it seems to me it is fair to conclude that

surgical shock is a condition of acute anæmia. Especially pertinent are seven cases of hip joint amputations. One case out of the seven died, and this one died of exhaustion from lack of nourishment. His stomach rebelled, probably from septicæmia which existed before the operation, and though he lived three days after the operation, not being able to retain any food in his stomach, he finally was exhausted and died. Three cases of hip joint amputation were from crushes of the whole extremity or of the thigh high up, and all these cases recovered and had no especial shock during the operations, though the shortest operation required a little over one hour for completion.

As it was necessary to consider the etiology of shock in discussing the idea of its pathology I wished to advocate, I will not stop to consider this part of the subject further.

Symptoms of Shock. I shall attempt no parallelism to argue further the identity of the three states which I have called shock. I defy any one, without the history of the case and the absence of any indication of violence, to differentiate them by the symptoms alone. There is absolute relaxation of all the muscles, extreme pallor, partial or complete unconsciousness, almost or quite complete anæsthesia, usually moist skin and cool surface, slow sighing and irregular respirations, dilated pupils, rapid and feeble pulse, chilliness, and sometimes a slight rigor. Beginning reaction is marked by nausea; frequently vomiting occurs.

The Prognosis of Shock. This should always be guarded. It depends, as every other serious condition does, upon the *individual* and the *manner* of its occurrence. Psychical shock, unless immediately fatal, usually is followed by recovery; sometimes the recovery is very slow, however. True surgical shock or acute anæmia is an exceedingly grave and doubtful condition. When it occurs in old or weak people it is usually fatal.

Treatment of Shock. The recognition of the essential anæmia of the brain as the constant pathological factor in shock gives the key to the treatment. The endeavor should be primarily to restore the blood to the brain. As this cerebral condition in psychical shock and in concussion has been produced by the inhibitory action through the pneumogastric by a violent irritation of the medulla, the vasomotor system must of necessity also be violently affected, as the medulla is the center of the vasomotor nerves. After low-

ering the head and placing the person in a recumbent position to obtain at least a small quantity of blood for the brain, the next indication will be to excite the action of the sympathetic nerves in order to restore the tone to the heart. Of course the elemental procedures of loosening the clothing, especially about the neck and waist, and taking care to supply fresh air must always be observed. Sometimes a quick, violent action of the diaphragm will assist in stirring up the splanchnic and the direct cardiac sympathetic filaments. Hence irritation of the nostrils in order to produce deep respirations or sneezing will do good. Hare recommends an abdominal compress for chloroform poisoning. Direct cardiac stimulants (rarely digitalis), at the head of which stands strychnia, are indicated. Heat to the surface should be applied in order to relax the cutaneous vessels, and friction to the extremities for the same purpose. Of the greatest importance in cases of psychical shock is it to remove the person from the place or locality which may have excited the dangerous mental condition before he recovers consciousness, else a relapse may occur. In cases of serious injuries it is of the greatest importance to take proper measures to prevent and to control hemorrhage *during psychical shock*, for very little bleeding will occur until this condition is passed. As almost complete anæsthesia exists, an Esmarch's tourniquet may be applied, vessels tied, or sutures put in without any disturbance or harm to the patient. In this condition, as soon as consciousness begins to return and so-called reaction begins, an anæsthetic, if given, will hasten the reaction and thereby restore somewhat the tone and quality of the pulse. I think these cases have given rise to the contradictory observations of various surgeons who report that in their experience an anæsthetic frequently improves the strength of the pulse; hence they recommend undertaking an operation "before the patient reacts from shock." This is a very unsafe recommendation, because if the second stage, acute anæmia, has already taken place, any operation which involves the further loss of blood is very apt to be fatal. The safer rule is always to wait with any operative procedure which must be attended with even a small loss of blood.

The treatment of acute anæmia is the same as the foregoing, with the full appreciation, however, that this condition is in these cases from an *absolute* as well as functional loss of blood. Energetic

measures must therefore be taken to restore some blood to the brain. The limbs should be tightly bandaged from the extremities upward to drive the blood out of them to the head, the head and shoulders lowered, heat applied externally, and large doses of strychnia hypodermically should be employed. I have used as much as 0.025 (gr. $\frac{1}{2}$) of the sulphate of strychnia in the course of an hour in these cases, and about 0.1 (gr. iss) in twenty-four hours. Caffeine in the form of best black coffee, digitalis, and the aromatic spirits of ammonia, I frequently use. Alcohol I think does harm rather than good; in late years I never use it for shock. Besides the above remedies, a most important indication is to restore fluid to the empty capillaries and veins. Many surgeons use habitually intravenous injections of a normal saline solution; formerly I also used it; I was, however, so frequently disappointed in its ultimate action that I have not used this method for some time. I have found far better, rectal injections of this hot saline solution. Now it is always a part of my routine practice in cases of shock to use large or frequent rectal injections of this solution. If the patient is in profound shock the quantity injected may be large—as much as two litres—care being taken to use a soft rectal tube and pass it up to the sigmoid flexure, while the patient has his buttocks raised, and then allow the fluid to flow from a douche can or fountain syringe into the colon. In cases of partial or complete consciousness I use half a litre of the solution, always injected by gravity alone into the rectum, and repeat it in an hour. The transit through the intestinal walls into the blood vessels is slower, but in my hands much more efficient than intravenous injections. As soon as the stomach will retain it, as much water as the patient can take should be given by the mouth. A generous fluid diet of a nitrogenous kind should be allowed for twenty-four or forty-eight hours, and then light but frequent feeding of a more solid kind. I think major operations should never be attempted, if they can possibly be postponed, during shock. I believe the very good results I have had in cases of extensive acute injuries are due largely to the fact that I have waited until the patient has had time to recuperate somewhat from his acute anæmia before operating. In the cases requiring hip joint amputations for injuries I waited thirty, forty, and about forty-two hours respectively before operating.

In conclusion, I beg the readers of this paper will not lose sight

of its main purpose, through the distraction of possible differences as to the theories advanced. I have tried to prove that shock which kills is a condition of acute anæmia; that this operates through the brain, as an anæmia of the brain, in depressing *all* the so-called *vital processes*; and that the proper treatment of shock is in the first place prophylactic, namely, *to prevent hemorrhage before operation and during operation*, and secondly, to cure shock by restoring blood to the brain as rapidly as possible, and then stimulate the heart by warmth, by good air, by strychnia, and by a normal saline solution injected into the rectum or veins. If all else is forgotten, keep firmly and carefully the idea that the life of a man is in his blood, and in order to save a man's life you must save his blood.

A REPORT OF THREE CASES OF UNUSUAL INTEREST.

BY R. B. MAURY, M.D.

MEMPHIS.

I. Sarcoma of the Abdominal Wall.

Abdominal wall tumors, in my experience, have been very rare. Richard Bright's work on Tumors does not make mention of them. The 1885 edition of Spencer Wells' book on Abdominal Tumors makes no allusion to them.

Skene Keith, in his work on Abdominal Surgery, 1894, reports one case which occurred in 1884 under his observation. This was removed by operation. It was situated in the abdominal wall above the umbilicus. It was a round-cell sarcoma, and there was no return after ten years.

Osler, in his work, the Diagnosis of Abdominal Tumors, 1895, reports one such case, "a sarcoma of the abdominal wall." He says it is uncommon in his experience, and is worth placing on record. This tumor was subcutaneous, in the lower umbilical and upper hypogastric regions, and there were secondary nodules beneath the skin of the other parts of the body. There was no autopsy, and it could not be ascertained if the growth was primary.

Bland Sutton, in his "Tumors Innocent and Malignant," 1893, states that primary sarcomata have been observed in the following muscles: Pectoralis major, rectus abdominis, peroneus longus, ten-

sor vagina femoris, adductor brevis, sartorius, tibialis anticus, and triceps.

Greig Smith, in his last Abdominal Surgery, 1896, says: "Solid "growths of the abdominal parietes are usually malignant, most "frequently cancerous, but sometimes sarcomatous. They cause "bulging of the parietes more prominent than their size would "seem to warrant."

The facts here collected may be regarded as the substance of our knowledge upon this subject.

Early in April, 1898, I was consulted by Mrs. M. of Memphis, because of an abdominal tumor which first attracted her attention, seriously, one year before. Since then it had grown rapidly, and at times slight pains were felt shooting through it.

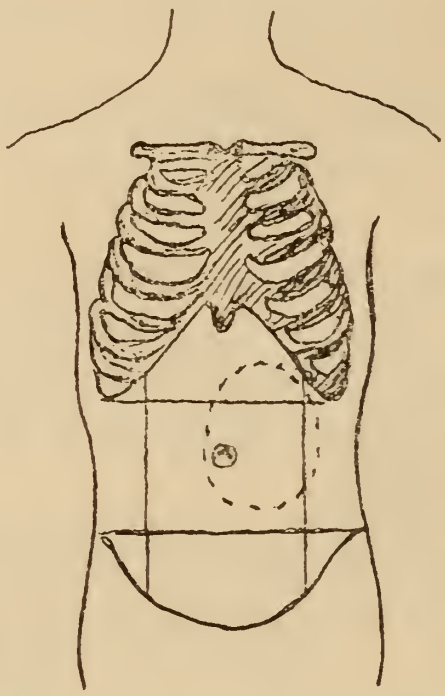


FIG. 1

It was hard and firm, with slight inequalities upon its surface, and was situated as it is represented in Fig. 1—above, below, and chiefly to the left of the navel. Laterally, it was quite movable; vertically, scarcely at all so. It was beneath the abdominal fascia and the left rectus abdominis muscle; and, to use Greig Smith's expression, "it caused a bulging of the parietes more prominent than its size would seem to warrant."

The patient was about 30 years of age, and her health was perfect. No evidence of disease in any other portion of the body was discoverable.

I regarded it as a primary sarcoma of the abdominal wall, and advised its speedy removal.

It was removed on the 30th of April. The tumor was covered in front by muscle and fascia, and these structures were in some places intimately blended with it.

Behind the tumor were the perimysium internum, and the peritoneum.

The tumor weighed nearly two pounds, and its removal left a large cavity which it was thought best to drain above and at the lower angle of the incision. The torn and ragged edges of the fascia were brought together as well as possible with catgut sutures.

Recovery was uninterrupted. Microscopic examination showed the growth to be a large spindle-celled sarcoma.

II. Fibroma of the Vagina.

Vaginal fibroma is of very unusual occurrence. The most satisfactory history of the disease is by Dr. Charles Carroll Lee, in Mann's American System of Gynecology. Careful search of the literature by Dr. Lee showed that only 58 cases had been reported up to 1888. In 44 of these cases, when the location of the growth was stated, it was found to be in the anterior wall in 24.

The tumor may occur at any age from childhood to 51 years. It is of slow growth. In Neugebauer's case, twenty-two years had elapsed since the patient knew of the existence of the tumor; and in Green's case, fourteen years.

The growth originates probably in the muscular layer of the vaginal wall. The structure is similar to that of the uterine fibroids, being composed of connective tissue and unstriped muscular fibers.

When the tumor is large, the chief symptom is uterine hemorrhage.

The case which is here reported came to me through the courtesy of Dr. D. D. Saunders, on 20th of April, 1892.

The patient was 40 years old; had been a widow for eleven years, and had had one child thirteen years ago. She had known of the tumor for several years, and had given it no attention until hemorrhages began to occur.

Fig. 2 gives an accurate idea of the location and dimensions of the tumor. It involved the entire anterior wall of the vagina, and pushed the uterus upward and backward, so that the cervix could scarcely be reached by the finger.

It was exposed by an incision through the wall of the vagina; then being seized with a vulsellum it was enucleated by dividing the strong connective tissue envelope. A continuous buried and marginal catgut suture was used to control bleeding and close the wound. A gauze vaginal tampon was then used.

She readily recovered, and the hemorrhages ceased. The tumor, upon microscopic examination, was found to be a fibro-myoma, the non-striated muscular fibers being scattered here and there in small bundles. The general structure was fibroid; the myomatous element might easily have escaped observation under a casual examination. Its long diameter measured 3 inches, the short 2½ inches, and it weighed 4 ounces.

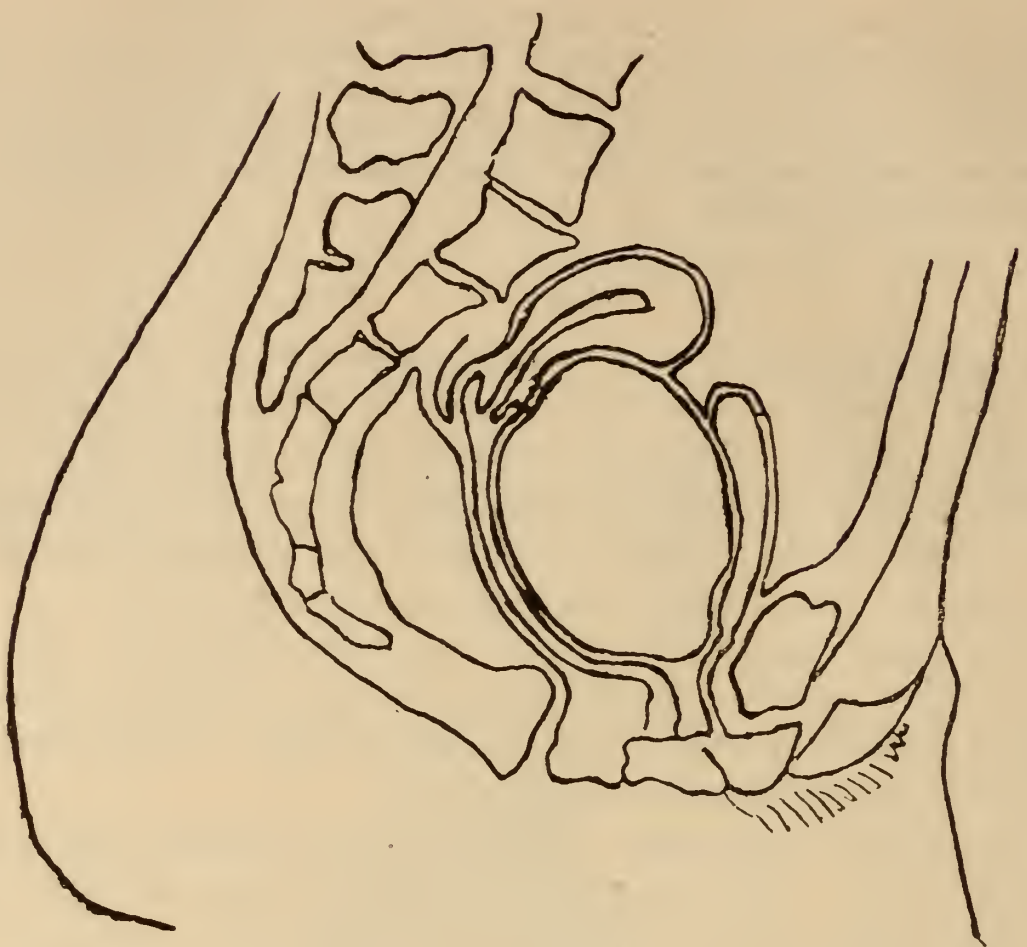


FIG. 2

III. Chronic Inversion of the Uterus.

Mrs. C., a multipara of 32 years, came to me from Mississippi October 30, 1894, for the relief of a supposed uterine polypus which was first recognized soon after the birth of her last child, three years before, and which had given rise to almost constant menorrhagia for that length of time. Careful differentiation showed the supposed polypus to be inversion of the womb of the second degree, in which the inverted part had descended into the vagina. The patient was very feeble and exceedingly anæmic.

After devoting several days to controlling the hemorrhage by tampons, and to rallying her, a continuous attempt was made by myself and assistants for nearly an hour and a half to reduce the inversion by the method of manual replacement, the hand being carried into the vagina, and counter-pressure being made over the abdomen. No headway was made by these efforts, and they were then discontinued because of the exhausted condition of the patient.

The colpeurynter was used for five days, being removed several times daily to allow the patient rest, and to administer hot vaginal douches.

A second attempt by manual replacement was then made, but still without success, and the colpeurynter was used again.

After the lapse of a week manual replacement was resorted to for the third time, and with some measure of success. A partial reinversion was accomplished. I then adopted Emmet's plan of closing the cervix over the fundus by introducing four silver

wire sutures through the lips of the cervix. These sutures were allowed to remain five days. When they were removed it was found that the uterus was completely reinverted. The patient went home well on December 2d.

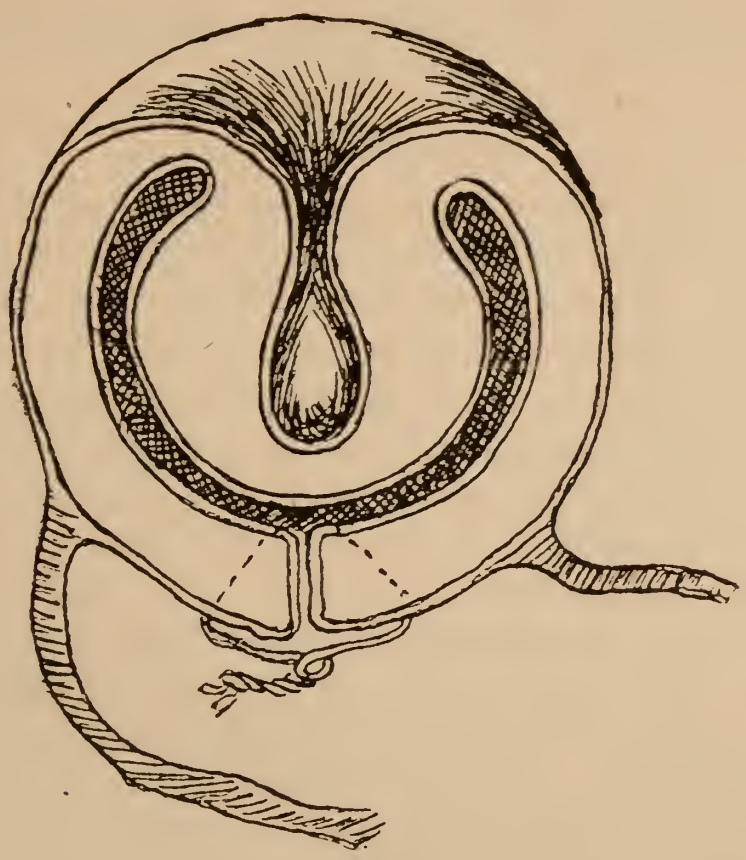


FIG. 3

Fig. 3, taken from Dr. Emmet's book, explains the method.

OCULAR SYMPTOMS OF TABES.—Hiram Woods, Jr. (*Ophthalmic Record*, June, 1898), discusses the ocular symptoms of this disease, with special reference to the pupillary inequality, the atrophy of the optic nerve and the muscle palsies. He reports three cases in which one or more of these symptoms antedated the more characteristic symptoms of posterior sclerosis. He regards the Argyll-Robertson pupil as absolutely diagnostic, and incidentally inclines to the view advanced by Moëbius in the *Twentieth Century Practice of Medicine*, that syphilis is "absolutely and always the cause of tabes."

THE TREATMENT OF CHRONIC NASO-PHARYNGITIS.

BY LEWIS S. SOMERS, M.D.

PHILADELPHIA, PA.

The term chronic naso-pharyngitis has been applied to a number of conditions, varying widely in the pathological changes present in this portion of the upper respiratory tract. The affection here described is characterized by a symptom-complex as follows: The patient complains of excessive muco-purulent expectoration, constant and most annoying during the day but especially marked on arising in the morning and at irregular intervals the nose will become obstructed, at first on one and then on the other side, both chambers rarely being closed at the same time. Colds in the head are frequent and a constant dry or sore throat is complained of. These are the main symptoms described by the patient, but further questioning usually elicits the history that some form of dyspepsia is present and morning nausea is comparatively common.

This group of subjective symptoms constitute the affection for which it is desired to outline a plan of treatment directed not only to alleviate, but effect a permanent cure, provided the hygienic environment of the case will allow. The affection is generally designated by the word "catarrh," it being probably the most common and familiar disease with which the physician has to deal, yet treatment in the majority of cases is unsatisfactory and the patience of the case is exhausted until the generally accepted idea of the incurability of the affection becomes firmly engrafted upon him. The first point in the successful treatment, is an accurate knowledge of the pathological changes present in the individual case. Although it is termed naso-pharyngitis, yet in many cases this region is comparatively normal and the symptoms are due to nasal changes, while in others the excessive amount of expectoration results from catarrhal inflammation of the lower pharyngeal and laryngeal tissues.

When a patient complains of these symptoms, thorough examination of the entire upper respiratory tract should be made under good illumination, that is, from the nasal vestibule to the trachea,

special attention being paid to the superior third of the pharynx and posterior parts of the nasal chambers. On examination of the nose, the turbinal cavernous tissue will be seen to be hypertrophied to a moderate extent, but accompanying this there is vasomotor relaxation with relatively great increase in the size of this tissue. The pharynx is slightly granular, with marked prominence of the capillaries, and the vault gives evidence of the source of increased secretions, as the lymphoid tissue is hypertrophied and the mucous glands secrete a vitiated mucus. The posterior ends of the middle turbinals are nearly always enlarged and there is found, as the pathological cause of the symptoms in probably the majority of cases, an ulcer non-specific in character, on the turbinals at this point; it is oval in contour, involving only the sub-mucous layer of the turbinal investure and is covered with a thin layer of pus. In a considerable number of cases it has been found impossible to relieve the complaint until local applications were directed to this point and the ulcer healed.

Merely describing this common and intractable affection in this cursory manner, so that the condition for which the treatment recommended can be fully appreciated, prepares us to enter more intelligently into a study of the treatment. Prophylactic measures directed to elimination of the surroundings of the patient acting detrimentally upon the mucous glands of the naso-pharyngeal region are of course to be desired, but the uncertain barometric changes in this country, and the accepted mode of living, entailing a greater amount of wear and tear on the individual than should naturally exist, defeats to a great extent our aim along these lines.

As it is impossible to here particularize the important elements entering into the successful prevention of catarrhal conditions of this portion of the economy, we will take up the treatment under two headings, the general or constitutional, and local medication. General treatment is often of more value than local applications, in fact, many cases do better when attention is solely directed to the general health than any other measures that may be employed. Frequently the throat disorder results as a local manifestation of a systemic dyscrasia such as rheumatism, this being one of the most frequent etiological factors in many pharyngeal affections. Again, the trouble may be aggravated by the presence of malaria, and in all these cases the removal of the general affection becomes neces-

sary to obtain successful local results. The patient must be put in as good a condition physically as it is possible to obtain; the treatment of the respective general conditions that may be present do not require mention here, but where no definite diagnosis except a "run down condition" is found, the hypophosphites and iodide of iron are very useful. In all cases the urine should be examined at more or less frequent intervals and always when the case is first seen, before any line of treatment be instituted. Especial attention being paid in the urinary analysis to the quantitative tests for uric acid, it being quite common to find it in larger amounts than normal, and the case improving only after appropriate treatment directed to the impaired metabolic processes. Should uric acid or the urates be found in excessive amounts, large quantities of pure water taken frequently will prove of valuable service and I am also in the habit of ordering the colon to be flushed out at frequent intervals. Pure spring water is equally as valuable as the more expensive mineral waters, for the effects produced depend upon the washing away of the uric acid in the primæ viæ, and not to any mineral constituents that may be present.

Locally to the affected parts various drugs are used, or such surgical measures as may be deemed necessary to remove new growths or ablation of structures detrimental to proper respiration through the nasal cavities. It is impossible to obtain results of any permanency unless there is free nasal respiration, and our efforts should be directed to obtain patency of this organ. Anterior hypertrophies should be reduced by means of oil and alkaline sprays or should this not be sufficient, more radical measures, such as cauterization with the electric wire or chromic acid, are advisable, while in a few cases the tissues have to be removed with the snare. Small spurs or exostoses on the nasal floor or septum should be sawed away, or if of cartilaginous nature, may be removed with the knife, and in all cases the objects to be attained are free nasal drainage and antisepsis. Provided the general health of the patient has been carefully looked after and nasal obstruction removed, we are then in a position to use local applications, but in many cases the foregoing is all that will be necessary, as the sources of irritation being removed the symptoms will diminish in intensity, and even should they not, we are in a position to obtain successful results by appropriate local treatment.

It is most convenient to divide our local remedies into pigments, ointments, powders, sprays and vapors. The value of pigments depend upon their accurate application to the area hypertrophied or the seat of the ulcer, should such be present. Under the head of pigments, turpentine with oil of anise makes a valuable application, especially in acute exacerbations of the chronic affection; it may be diluted with lavender, and any of the essential oils may be used to disguise the odor, anise as mentioned being very agreeable to the majority of patients. This should be applied to the naso-pharynx with the cotton tuft on a curved applicator several times weekly. In many cases it seems almost impossible to apply the drug on account of the irritable condition of the parts, the uvula immediately being drawn upward and backward as soon as the tongue depressor is placed in the mouth; in these cases a one per cent. cocaine spray will greatly facilitate the treatment, or in its place good results are obtained with a spray of five grains of menthol to the ounce of liquid cosmoline or any of the bland oils used for this purpose. A palate retractor is frequently of value and although somewhat unhandy at first, one soon becomes able to manage it without any difficulty. White's self-retaining is the one I use and have found it very satisfactory, enabling one to apply the pigment to the proper area desired. It seems to be the custom to apply the application to the pharyngeal walls and vault without any evidence of the medicament reaching the part diseased; should the condition be due to ulceration of the posterior end of the middle turbinal, it is impossible in the general way of making local applications, to reach the affected parts at all, and it is best to use the rhinoscopic mirror in every case where applications are made to the naso-pharyngeal region.

As a stimulating absorbent the following has been found useful in many cases:

℞ Iodine crystals gr. x
Potass. iodide gr. xx
Menthol gr. l
Glycerine q. s. ad. ℥ i
M. Sig. For local application.

Or, the muco-purulent secretion may be materially diminished by:

℞ Camphor
Carbolic acid āā gr. xxx
Menthol gr. L
Turpentine ʒ ss
Albolene q. s.

Sig. The albolene, or any suitable oil, is added drop at a time until one drop remains free in the bottom of the bottle.

Nitrate of silver in obstinate cases is valuable if applied to limited areas, and it may be used in solutions varying in strength from ten grains to saturation. As is well known, the application of weak solutions of silver to the mucous membranes is somewhat painful, while strong solutions if carefully used cause no inconvenience, but caution should always be observed, to see that there is no excess of fluid on the applicator and that it does not touch any part but that for which it was intended.

Ointments have not been used to any great extent in the naso-pharynx, but they are very serviceable, as they remain for a considerable time after being applied, and allow the drugs to exert a continuous action. They are applied in the same manner as pigments and various combinations may be used, the following being of service in the affection described:

℞ Ichthyol part 1
Zinc oxide parts 10
Wheat starch parts 10
Lanoline parts 20

Many other combinations will readily be suggested by using pigments in this manner, and often better results are obtained with the ointments than with the latter form of medication. Powders are rarely of value, as they are apt to get into the larynx and produce violent attacks of coughing, even if the utmost care be used in their application, and at the same time a great objection is, that it is impossible to apply them solely to the parts desired, as they cover the entire region and more or less obstruct the already diminished respiratory area. Of far more value and utility are the sprays, always being used before other local applications to remove mucus, etc., and are serviceable to the patient as readily being used at home. With a coarse or fine spray we may apply any drug in solution that seems best suited to the individual case. The alkaline,

antiseptic spray or wash depending on the method with which it is used, known as "Seiler's," being representative of its class. Sprays may be used to cleanse the parts, as the one just mentioned, or as antiseptics, astringents and sedatives, hamamelis representing the last class.

Vapors or nebulæ are generally used as inhalations for the various forms of laryngeal inflammation, but occupy a distinct and valuable place in the therapy of the affection described in this paper. Their value lies in the penetrating power they possess, the medicated vapor penetrating the recesses of the naso-pharyngeal region and, when an oily base is used, remaining in contact with the tissues for a considerable time after being inhaled. Nebulæ may be used either with or without the addition of steam, the choice depending upon the result desired, and when the mucus is tenacious and clings to the vault of the pharynx, especially at the orifice of the Eustachian tube and adjoining fossæ, we find an alkaline, steam vapor will readily cause the separation of the adherent secretions from the mucous membranes, and for this purpose the following will be found useful:

℞	Sodii bicarb.	
	Sodii biborate āā	gr. x
	Potass. bromide	gr. v
	Aqua mentha pip.	ʒ ii
	Aqua dest. q. s. ad.	ʒ i
Sig.	Use twice daily.	

Inhalations may be used at any time during the day, provided steam is not mixed with them; should hot vapors be desired, the patient must not go into the air for at least one hour afterward, as the mucous membrane becomes relaxed and coryza almost invariably results. It is the best plan to use inhalations at the room temperature during the day and then direct the patient to steam the naso-pharynx for five minutes just before retiring for the night; in this way all danger of coryza or an acute exacerbation of the catarrh will be avoided, and after this has been repeated a few times there will be no difficulty in removing the tenacious mucus. The following formulæ may be used at night as a stimulant; it acts by increasing glandular secretion and stimulating the parts to normal activity:

℞ Ammon. chlor. gr. xv.
Tr. benzoin comp. ℥ i
Sig. One-half teaspoonful in four ounces of boiling water.

There are a number of satisfactory devices to use vapors that are very useful in office work, while the patient may obtain a vaporizer especially made for this purpose, or the solution desired may be placed in a cup filled with boiling water, over this an ordinary funnel is inverted and the medicated steam may readily be inhaled. It is essential to see that the patient allows the vapor to pass through the naso-pharynx and out through the nose. Although this is usually more difficult to learn than the usual forms of laryngeal inhalations, still no trouble should be experienced on this point.

3554 North Broad Street.

AN OBSTETRICAL OUTFIT.*

BY HENRY E. TULEY, M.D.

LOUISVILLE, KY.

Assistant to the Chair of Practice, and Lecturer on Physical Diagnosis, in the Kentucky School of Medicine, Louisville; Visiting Physician to the Masonic Widows' and Orphans' Home.

An obstetrical outfit, which is of the greatest possible assistance to the physician in preparing for the conduct of an aseptic delivery, and tends to increase the safety and comfort of the mother during the critical lying-in period, should be welcomed by the profession. There have been a number of outfits or kits presented to the profession from time to time which have not proven popular because not practical. They have been either so costly as to place them beyond the reach of the average patient, or their contents have not been chosen with regard to the true needs of the accoucheur, patient or nurse.

The outfit herewith presented has been prepared for the writer by the Henry Drug Co. of Louisville, and because of the demand for them, has been prepared for general sale. Its contents have been selected with the greatest care, the cost being one of the chief items considered. At $3 the outfit is one of the cheapest on the market, and entirely within the reach of all classes. Were pre-

*Read before the Forty-Third Annual Meeting of the Kentucky State Medical Society, Maysville, May 11, 1898.

scriptions written for a few of the more important articles most needed, and bought of a retail druggist, the cost would nearly reach the total cost of the outfit. It is a comforting thought to know that one will find in the lying-in chamber everything that will be needed by attendant or nurse without the necessity of writing prescriptions for the desired articles.

The outfit is attractively gotten up, thoroughly sterilized and hermetically sealed, with printed instructions on the label that it be not opened except by the nurse or physician.

Taking up the contents *seriatim*, your attention is called to the following:

The lochial pads provided are made after those used at Sloane Maternity Hospital, New York City, an absorbent body of sterilized cotton and cotton waste, equal parts, encased in a wide mesh gauze. The vulva may be covered directly with a piece of gauze, over which is placed the lochial pad. The advantage of these pads over the ordinary menstrual cloths or old sheets, commonly used, is obvious. Any mother who has once worn these will not be content again without them. Many cases of post partum infection could be prevented were these details seen to more closely.

The obstetrical bed is made of the same material, is quilted, and large enough to thoroughly protect the bed after delivery.

The uses of the sterilized gauze are numberless; as vulva protection; to cleanse the mouth and eyes of a child when born; as a cord dressing to be later described; for wash cloth at first bath of the child; for the care of the mother's nipples, etc.

The safety pins are indispensable.

The fountain syringe, when needed, is needed badly, and the ordinary household one cannot be made aseptic.

The nail brush is one of the chief articles of the armamentarium, and is left to be used by the nurse afterward. Without it no hand is ready to be used in a vaginal examination. Almost of equal importance is the nail file in the toilet of the hands. If sufficient care is taken in the toilet of the hands, no antiseptic need be used, but the bichloride tablets are included for those who prefer to use them. The etherial antiseptic soap is excellent to be used either for the preliminary or final washing before examination is made. It leaves the hands in a smooth and soft condition, which is very pleasant.

White vaseline in the tube, which prevents contamination by contact with the air and floating dust, is used for the lubrication of the examining finger. The ordinary vaseline is used for anointing the child. Lard with salt in it should not be used.

The boric acid solution, diluted one-half or used pure, is for cleansing the child's mouth and the mother's nipples before and after nursing.

For those who use tape or cord for tying the funis, the tape in the outfit will be found especially adapted for this purpose. It is strong and light, and does not cut the fingers when tying tight. The writer has for three years used the Kellogg Funis Band Applicator, and with signal success, never having seen a hemorrhage from the cord. Its ease of application and safety commend it.

My attention was first called to the use of balsam of Peru and castor oil as a cord dressing by Dr. A. Ernest Gallant of New York City, who has written an exhaustive monograph on the use of this dressing in surgical conditions. I have used it in a number of cases, the average time for the separation of the cord being three and a half days—the longest seven days, the shortest two days. Contrary to the opinion of a number of authorities on the subject, that the cord does not separate as quickly or as smoothly with an oily dressing as with a dry powder, my observation proves that it separates more quickly, and leaves a smoother and dryer navel, and gives a stump after severing the cord that is infinitely more easy to care for than when the powder is used. A hole is cut in a number of pieces of gauze two inches square, and large enough for the cord to be drawn through, and a liberal supply of the balsam oil is poured on the cord, saturating the gauze. The oil is replenished each day, when the child is washed, and gauze not disturbed until separation takes place, the whole dressing retained in position by a loosely applied binder. Should any moisture remain after the cord drops off, or a granulating spot appear, nothing is better than this dressing to dry it up and keep it aseptic.

The first toilet of the child is not complete without a drop of the nitrate of silver solution in each eye, after the Credé method, and a small quantity of this is included in the outfit.

Ergot has also been included.

111 West Kentucky Street.

THE NERVOUS SYMPTOMS OF PERNICIOUS ANÆMIA.*

BY CHARLES W. BURR, M.D.
Clinical Professor of Nervous Diseases in the Medico-Chirurgical College, Philadelphia.

I have told you often how frequently constitutional diseases and affections of the abdominal and thoracic organs cause diseases of the nervous system. They act in various ways. For example, chronic interstitial nephritis is accompanied by arterial degeneration, making the vessels less resistant to the pressure of the blood current, in consequence of which rupture occurs and cerebral hemorrhage. Again, as in diphtheria, the poison of the disease may first act locally, causing for example a palsy of the palatal nerves, and later being carried by the torrent of the circulation may exert a selective action on certain nerve elements, and affect peripheral nerves far from the primary seat of the disease, or involve larger or smaller areas in the spinal cord. In a third group, of which syphilis is the best example, the nervous symptoms may be produced in several ways. There may be a gumma or syphilitic meningomyelitis, or years after the primary sore, when the syphilis has ceased to be, there may develop diseases not syphilitic, but the remote effects of syphilis. Locomotor ataxia is the best example of this. It is not syphilis of the cord. Post-mortem we do not find the same lesions that are present in nervous syphilis, properly so called. The lesions are not distinctive as to their cause. Whether the posterior sclerosis in any given case be or be not syphilitic, the lesion, both macroscopically and microscopically is the same.

Among the diseases causing distinct and definite nervous symptoms, pernicious anæmia is not the least important. I am able, through the kindness of Prof. Anders, to show you a typical case, and after studying it I will relate to you the histories of other cases and see what lesson we can learn as to how anæmia acts, what symptoms it produces, and what lesions. Let me warn you at the outset that we are to study the definite disease, pernicious anæmia, and not that rather mythical affection, cerebral and spinal anæmia, a condition assumed to explain certain indefinite symptoms referable

* From a clinical lecture delivered at the Medico-Chirurgical Hospital.

to the central nervous system, and occurring, though blood examination shows nothing wrong, an anæmia due to circulatory disturbances confined to the brain and cord, not due to any distinct cardiac disease, and showing after death no pathologic changes. In the older text books this condition was described at length and minutely detailed, and elaborate tables of the differential diagnosis of spinal anæmia and hyperæmia were given. Now it is usually dismissed in a paragraph as a thing which may be but is not proven.

C. D., male, white, 63 years old. He is married and has four children. He was admitted to the hospital March 17, 1898. He dates his present trouble from an attack of pneumonia which he had nine years ago, and which was followed by pyothorax. We have been able to get the following information from the hospital to which he went a few months after the attack of pneumonia. He then, that is about nine years ago, complained of great muscular weakness, so that the slightest effort caused great tire. There was occasional vertigo. He staggered a little when walking, and was at times tremulous. He complained a great deal of numbness in the hands and feet. Both sexual power and desire were absent; the heart was normal; the pulse averaged 100; tension was good, and the arteries were soft; the chest wall was somewhat retracted at the seat of the scar of the operation for pyothorax, but there was no evidence of any active lesion in the lungs; the right knee jerk was normal; the left increased, and both were readily reinforcible; ankle clonus was absent; the eye grounds were normal; intelligence was good. After staying in the hospital two months he was discharged very much improved, and has been able to continue his work till three months ago, although he has never been in really good health, and has consulted many doctors. About three months ago he began to feel very weak, to suffer from vertigo, to become short-breathed even when sitting quietly, to grow pale and to be very numb in the hands and feet. When he was admitted to Prof. Anders' ward examination revealed the following condition: The skin was pale lemon yellow, the conjunctivæ pearly. There was a fairly good amount of subcutaneous fat. The apex beat was normally situated, and there was no thrill. Cardiac dullness was normal in area. A soft systolic murmur was heard at the apex and over the body of the heart, and a faint venous hum was present in the vessels of the neck. The urine was normal. Prof. Fox examined the eyes and found the blood vessels in both very pale, and in the left there were a few small retinal hemorrhages. Dr. Pfrom examined the blood and found: Hemoglobin 20 per cent., red corpuscles 1,400,000; poikilocytosis was marked. The red corpuscles varied greatly in size. At a second examination the red corpuscles had fallen to 1,000,000, hemoglobin remaining at 20 per cent. There was a slight increase in the number of white corpuscles, with a relative increase in lymphocytes, and decrease in polynuclear elements. A test meal was not well digested. The stomach contents contained neither free acid, hydrochloric nor lactic acid. Microscopic examination of the fæces was negative.

Now let us examine him from the neurological point of view and see what we can learn. You notice as he moves about in bed that there is no true palsy. Though all movements are weak none are weaker than the others. On the other hand all movements are

awkward and incoördinate. He cannot without great difficulty, and only after several abortive attempts, touch my hand with either foot, and when he tries to cross one leg over the other it is flung over wildly. When he endeavors to touch his nose or ear with one finger it goes far wide of the mark. The ataxia is brought out still more plainly when he walks. He staggers about and can scarcely stand, so great is the sway when the eyes are closed. The knee jerks are absent and not reinforcible. He answers quickly when touched on the hands or feet, but says that sensation is numb. It feels as if there were a layer of prickly cotton between his fingers and whatever object he touches. These are all the positive signs of disease that examination reveals. With such findings—absent knee jerks and ataxia, and a history of impotence, vertigo, and formication—we think first of locomotor ataxia. Is that the explanation of the case? No, for the following reasons: There is no history of rheumatic or lancinating pains, one of the most characteristic symptoms of locomotor ataxia, and one which most frequently appears at the very beginning of the disease. Argyll-Robertson pupil is absent, and indeed there are no disturbances of the ocular muscles. He has never had any gastric or other crises. Since these are the great symptoms of locomotor ataxia, quite as important as the loss of the knee jerk, and the presence of muscular incoördination, and indeed more constant than the latter, I feel justified in thinking that he has not a true posterior sclerosis, and that his nervous symptoms are due to the pernicious anæmia. How long the disease has lasted, whether it dates back nine years, and is one of those cases which, under treatment, improve greatly, only to fall back again and again improve, or whether it is of recent origin, is impossible to determine, because we have no knowledge of the condition of his blood previous to a few days ago.

Now let me read you a few notes of a somewhat similar case:

M. M., merchant, aged 60, came to me in Sept., 1892, complaining that ever since his daughter's death, one year previously, he had been melancholy; he felt weak and tired; the outer side of both thighs and the abdomen were numb; the legs felt asleep; he was constantly drowsy and suffered some from vertigo; his skin was waxy pale; he was not emaciated; slight sway appeared on standing with the feet close together, and he staggered somewhat in walking; he used his hands awkwardly; the knee jerk was absent; at first the heart sounds were normal, but a few weeks later a soft systolic murmur was audible at the apex and over the body of the heart; the lungs and abdominal organs were normal; there were neither signs nor symptoms of cancer of the

stomach; blood examination gave 25 per cent. of hemoglobin and 1,675,000 red corpuscles; poikilocytosis was marked, and a few of the red corpuscles were nucleated; the urine contained neither albumin, sugar nor casts. Under treatment with arsenic in ascending doses and Blaud's pill he improved so much that he was able to return to business, but in a year he began to grow worse again. The blood count and hemoglobin percentage fell rapidly, dyspnœa became very marked, œdema of the legs set in, retinal hemorrhages occurred, and in eighteen months he died. Necropsy was not permitted, but I have no doubt that it was a case of pernicious anæmia. The clinical picture was typical.

If these two cases stood alone, if there were no other evidence that pernicious anæmia can cause spinal cord disease than the mere occasional association of nervous symptoms, we should not be justified in drawing any conclusions. Fortunately we have much stronger evidence, that from post-mortem examination. Since Lichtheim's paper, published in 1887, a number of writers have described cases presenting distinct nervous symptoms, and showing at necropsy a fairly constant lesion, so that now we may regard the matter as proven. You must not, however, carry away with you the idea that in every case of pernicious anæmia the spinal cord is organically diseased. Such is not the case. In what proportion of cases a lesion of the spinal cord is present has not as yet been determined. I am inclined to think that in my own series of cases, verified by post-mortem examination, the proportion, six cases out of seven, is higher than the average (*University Medical Magazine*, April, 1895.)

The patients usually give a history similar to that of the above two, and on examination show the same signs. A complete picture of locomotor ataxia is never seen. Occasionally the knee jerks are increased, and even spastic, and ankle clonus may be present, and the patients present a fair picture of ataxic paraplegia. Any local palsy is always due to some complication.

Let me say a few words as to the morbid anatomy. The white matter alone of the cord is seriously affected. The posterior roots are either not at all or very slightly involved. The posterior columns may alone be degenerated. In the greater number of cases there is marked degeneration of the posterior columns, with much less degeneration in and around the lateral tracts. So far as I know the latter are never affected alone. The cervical swelling is always the seat of greatest disease. Another pathological condition is sometimes found, namely, there occur small, scattered hemorrhages throughout the cord, and consequent islets of sclerosis. It is held

by some, though on scarcely sufficient grounds, that these hemorrhages occur in all cases in which there is found disease of the cord, and that the somewhat systemic degenerations are secondary to them. Others believe that the lesion is due directly to the anæmia, the poverty of the blood, that is, a direct local starvation. The most probable explanation is, that whatever causes the anæmia at the same time acts directly upon the spinal cord in the same way that the toxine of diphtheria produces multiple neuritis. Because a patient is anæmic and has nervous symptoms it does not necessarily follow that the latter are due to the former. Such reasoning would be rash, and would lead you into frequent error. The anæmia may be a mere secondary thing, like that occurring sometimes in locomotor ataxia, or it may be caused by a complication. As an instance of the latter the following case is interesting:

A gentleman, 53 years old, complained of general weakness, dyspepsia, vertigo, numbness, etc. He was somewhat emaciated and very pale; gait was paralytic and spastic; the knee jerks were increased; the muscle jerks over the entire body were very marked; he had some slight difficulty in micturition; there was no anæsthesia; in short his history and condition was that of a chronic myelitis; hemoglobin was 45 per cent., and the red corpuscles numbered 3,750,000, an anæmia too slight to account for the symptoms. On further examination we found (what he had not told us of before) a large painful mass firmly fixed to the dorsal spine. It grew rapidly, caused complete paraplegia, and finally death. It was an osteosarcoma. The anæmia of course was a result of the malignant growth, and in no way responsible for the symptoms.

It has been suggested that the use of arsenic in anæmia could cause paralytic and sensory symptoms. This is of course true.

A girl had been anæmic (I have forgotten the exact numbers, but the anæmia was chlorotic in type) for a long time, and had been given much arsenic. She very rapidly became weak in the legs and later in the arms. I was then asked to see her. Though a purely motor paraplegia may occur in chlorosis her condition was surely due to the arsenic, because the symptoms were those of a peripheral neuritis. The palsy was confined almost entirely to the extensor muscles; there were islands of slight anæsthesia; the knee jerks were absent, and there was beginning local wasting; on the abdomen there was the bronzing of the skin, which sometimes is present in chronic arsenical poisoning.

The danger of this error in diagnosis is not great in pernicious anæmia, because the nervous symptoms usually begin early in the disease and before arsenic has been used. You may, however, of course poison a case of pernicious anæmia. I have seen one case in which suddenly a peripheral neuritis was added to the spinal

cord disease by the prolonged use of arsenic. In studying cases of syphilis you will sometimes find it hard to determine whether some of the symptoms are due to a distinct syphilitic lesion or to the anæmia, for as you know syphilis may cause very marked anæmia. The anæmia in recent syphilis is usually chlorotic in type, but in the tertiary stage it may resemble pernicious anæmia; each cell, however, is apt to have a lower color index, and leucocytosis may be present. The following case shows well the chlorotic anæmia of syphilis:

J. S., a merchant, 40 years old, had a chancre ten years ago. He was under treatment for two years and escaped all secondaries. About two years ago he began to have violent attacks of lancinating pains, occurring only before a storm. He supposed them to be rheumatic. On examination he was found to be very pale; motor ataxia was absent; there was slight sway on standing with the eyes shut and the feet close together; the knee jerk was absent and not reinforcible; Argyll-Robertson pupil was present; the urine was normal; the blood contained 30 per cent. of hæmoglobin and 4,400,000 red corpuscles; there was no leucocytosis. Treatment with Blaud's pill brought the hemoglobin up to 80 per cent. in a few weeks, and his general condition improved greatly without any change in the signs of organic cord disease.

This man had a true posterior sclerosis with an accompanying anæmia.

1327 Spruce street.

THREE CASES OF CROUPOUS PNEUMONIA WITH EARLY CRISIS—ONE OF APYRETIC TYPHOID INFECTION.

BY H. A. HARE, M.D.

Professor of Therapeutics in Jefferson Medical College, Philadelphia.

While it is a well known fact that acute croupous pneumonia often reaches its crisis earlier than the classical ninth day, the histories of the following cases may not be lacking in interest:

The first case is that of J. B., aged 24, a male who, for two years, had suffered from asthma, and had had severe attacks for two nights before his present illness set in. At midnight before his admission he developed a severe rigor which lasted for three hours, followed by high fever, pain in the right side, dyspnœa and cough. On admission early that morning his temperature was 102 degrees, respirations 32, and rusty sputum had begun to be expelled. An examination of his chest showed dullness of the right base posteriorly, and of the right apex anteriorly, with bronchial breathing and increased vocal fremitus and resonance. There were numerous fine rales in these areas. By 8 p. m. his condition was very alarming. His nails were blue, his face dusky, res-

pirations rapid, and he was exceedingly restless and complained a great deal of pain in his right side, and the constant cough. A consultation was held and it was agreed that he could not survive twenty-four hours. Notwithstanding this fact, he continued equally ill for four days more, when crisis suddenly appeared, and it was followed by an astonishingly rapid convalescence, the patient sitting up in his bed nine days after he was taken ill.

This case, therefore, had his crisis on the fourth day, which is unusually early, and it is interesting further because it was one of those instances in which the force of the disease was expended rather on the lungs than in a general infection, for although most of the right side was involved, and dyspnœa and cyanosis, with much laboring of the heart, was present from the obstruction to circulation and respiration, there was no evidence of a grave infection as we see in some cases. It is also interesting as an instance of croupous pneumonia following asthma rather than the more common form, catarrhal pneumonia. Finally this case is of importance as illustrating the value of strychnia and belladonna in those cases of pneumonia in which the lungs and heart are failing more from mechanical than infectious causes. The strychnine was given boldly whenever he seemed flagging, as was also the belladonna when the vessels seemed relaxed and leaking. On two occasions his condition was so serious that he seemed to be in articulo mortis, when the strychnine produced a rally. His respirations, which were 32 on admission, rose to 55 on the third day of his illness, his pulse to 160 per minute, while his highest temperature, several hours after admission, was 104 degrees.

The second case is that of a man of about 26, who was seized with a chill on the night of January 25th. He was admitted to a private bed under my care on the morning of the 26th, when his temperature was 103.4 degrees, although it speedily rose to 104.3 degrees. All the physical signs of croupous pneumonia were present, and there was some cyanosis and dyspnœa, the respiration being 24 and the pulse 118. On the afternoon of fourth day a fire broke out in the hospital, and all the patients becoming alarmed fled downstairs, a member of the staff having shouted into the floors as he rushed upstairs: "Everyone who can walk must run." Under these circumstances it was remarkable to find how many could run, and my patient ran from the third story to the ground floor, and finding there was no danger then returned to his bed. Instead of his being made worse by this adventure, his temperature, which was 104 degrees when the fire broke out, fell suddenly to 99 degrees, then shot up to 103 degrees, and crisis then followed, with a normal temperature on the afternoon of the fifth day, the chief fall being after the fire from 103 degrees to 100 degrees.

The treatment in this case consisted in controlling the temperature by sponging, and in the administration of niter in cool water.

The third case was that of a young man of 22 years, who, after severe exposure, developed acute bronchitis. This he ignored and continued his exposure for ten days, drinking heavily part of the time. I was called to see him on the 17th of March and found that he was still in the initial chill of acute croupous pneumonia with impaired resonance, and later in the day some dry rales developed on the right side of the chest. Within twenty-four hours he developed rusty sputum with free blood in it. His temperature was 103 degrees the next day, and careful examination showed that the right middle lobe was almost, if not entirely, involved. There was active delirium. Frequent spongings were needed to control the temperature which, at its highest point on the fourth day, reached 104 degrees. On this day a pseudo-crisis occurred in the afternoon, necessitating the use of external heat and active stimulation, and after this the temperature rose again to 103.3 degrees. Later that day, between 6 p. m. and 2 a. m. of the fifth day, the temperature fell to normal. As the patient had been using alcohol to excess, active stimulation was needed all through his attack until recovery occurred.

The last case I wish to report, one of apyretic typhoid fever, is that of B. M., aged 22, a male with a negative history, except that he had true typhus fever at 16 years. On admission he had a temperature of 98.4 degrees, pulse 84, respiration 26, tongue coated, showing distinct red tip and edge; had an apathetic appearance, complained of headache, pupils were dilated, and there was tenderness and gurgling in the right iliac fossa. He still had constipation, but when by medication bowels are acted upon, the fæcal matter is of pea-green color and liquid. There was an eruption of "rose spots;" spleen normal. Upon patient's abdomen and back are found numerous pale-blue spots, "tache bleuatre." Close inspection also showed evidences of pediculosis, several ova being attached to hairs.

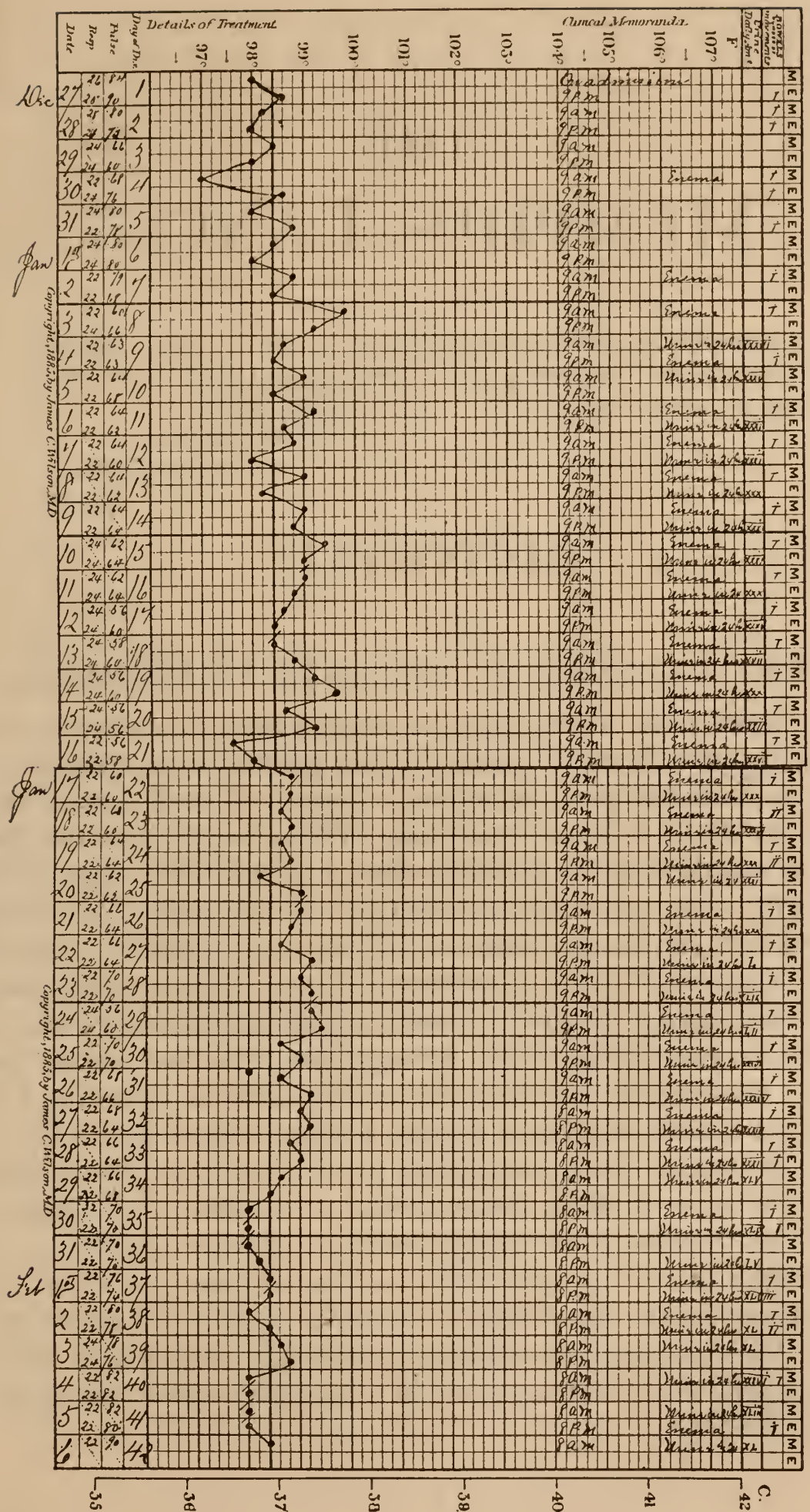
On December 30th it was noted that the spleen was slightly enlarged, also that the palms showed the characteristic yellow tint; constipation still exists and pulse is not so rapid as on admission.

Urine yellow, s. g. 1020, acid, no sugar, no albumin.

January—Headache has nearly disappeared, but the stupor still continues.

Diagnosis—Afebrile typhoid.

The accompanying temperature chart is an interesting confirmation of this history.


Details of Treatment.
Clinical Memorandum.
Date
Resp.
Pulse
Day of Dis.
Dec
Jan
Feb
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EDITORIALS.

THE PROGRESS OF MEDICINE IN MEMPHIS.

Memphis does not lay claim to being a great "medical center." There are some facts in regard to her growth in a medical way, however, and her position as an exponent of good sanitation, to which we desire to direct attention. Whenever the name of Memphis is mentioned, one instantly thinks of the dark days of 1878 and 1879, when yellow fever developed in our midst, and finding fruitful soil, germinated into one of the most frightful epidemics which it has ever been the misfortune of any community to undergo, and which gave us a blow in point of population, finance and unwholesome reputation, which twenty years have not wholly overcome. Profiting by that dear lesson, we have in operation today as good a system of sewers, as pure a water supply, as well paved and well cleaned streets as any city in this country. The outbreak of yellow fever in 1897, due to spread of infection from imported cases, has impressed on us the need of a stricter quarantine, and has taught the foolhardy few that all the sewers under the earth cannot prevent the spread of this disease if we allow it to be brought here. The proposed municipal control of the waterworks, soon to be assumed, will render our system of sanitation and sewers much more effective.

The situation of the city on high bluffs raises the inhabitants above much of the miasm of the surrounding low districts. The surface of the country is broken by gently sloping ridges, the highest point of which traverses the southern border of the city, gradually receding to the northward, carrying the waste and drainage in half a dozen creeks and bayous separated by minor ridges. These separate drains are sufficiently numerous and of proper grade to adapt them admirably to a system of medium-sized mains, in which form the Waring sewers are most successful.

Memphis has an alert President of the Board of Health, and under him a well-organized health department, which enjoys the confidence and coöperation of the profession. The President has secured for the city the erection of two crematories for the disposal of garbage, formerly dumped into the Mississippi river. At the suggestion of the medical societies and members of the profession individually, there has recently been created the office of city chemist and bacteriologist, under the Board of Health, which office has been filled by a gentleman who comes among us highly endorsed, and who has at his disposal a thoroughly-equipped laboratory for the analysis of foodstuffs, milk, water, etc., and the chemical and bacteriological examination of such specimens as the good of the community may, in the judgment of physicians, require.

The appointment to this office of a layman, and he from another city, is not indicative of a lack of competent chemists and bacteriologists in the ranks of the local profession, but no one felt that he could relinquish his practice and devote his entire time to the laboratory work for the emolument at present attached to the position. We hope the importance and value of this work will be so impressed on our city fathers, that we may shortly possess a qualified pathologist for the city, as well as a chemist and bacteriologist.

We have four hospitals—St. Joseph's, the City Hospital, the Lucy Brinkley Hospital, and the United States Marine Hospital. The former is under the control of the Franciscan Sisters and is well equipped, especially for the accommodation of private patients. A full staff of visiting and consulting physicians and surgeons and one resident physician attend the patients in the wards. St. Joseph's Hospital has free beds (for white patients only), in addition to ample accommodation for those who can afford to pay.

The City Hospital is just completed at a cost of $65,000, and is

as great a source of satisfaction and pride to the city as its predecessor was an eyesore and a disgrace. This hospital is thoroughly modern, with electric elevators, indoor telephones, forced ventilation and heating, and an operating amphitheatre which for beauty, asepsis and equipment, will stand comparison with any with which we are familiar. In the construction of the hospital the city had the advantage of the advice of Dr. Billings, who personally inspected and criticised the plans. This hospital has 130 beds, accommodates only the indigent (white and black), and is under the control of a medical superintendent, a visiting staff and four resident physicians, and has in addition a training school for nurses.

The Lucy Brinkley Hospital is a non-sectarian hospital for white women only, and is supported and controlled by the women of Memphis. The surgeon in charge, our co-editor, Dr. R. B. Maury, with two assistants, and a corps of nurses, has given this little institution an excellent reputation in this locality, and we hope soon to chronicle the erection of a modern and commodious building, which is greatly needed and earnestly desired, and which will be soon begun.

The Marine Hospital is a Government institution, and under the charge of a Marine Hospital surgeon.

In addition to these public hospitals there are two private gynæcological infirmaries, accommodated in specially constructed buildings, and each with a training school for nurses in connection.

The Shelby County Poor and Insane Asylum, a few miles from the city, is under a medical superintendent and has a staff of two consulting surgeons, a rectal surgeon, an ophthalmologist and a pathologist, and three resident physicians. The Children's Home has an attending physician and an oculist and aurist. The Church Orphans' Home has an attending physician. The Leath Orphan Asylum, the Old Women's Home, the Home of the Good Shepherd, and the Home of Refuge, have semi-official staffs who serve when occasion demands, and are mentioned along with the others to show that our indigent sick and unfortunate are well provided for.

A County Pest House is provided for the accommodation of persons suffering from contagious diseases.

There are two free dispensaries in the city of Memphis. The City Dispensary is conducted by the Secretary of the Board of Health, and treats 4000 to 5000 patients a year. The East End

Dispensary is under the control of the Memphis Hospital Medical College, and treats 5300 patients a year.

While so well supplied with facilities for giving medical treatment to the poor, we think it a source of gratification that these institutions are not abused. Hospital and dispensary abuse, so loudly complained of in Eastern cities, is not heard of with us. This is partially due to the diffidence with which the white people regard public institutions, and partially to the supervision exercised by those in authority to prevent these abuses.

We have a prosperous Medical College, with a full faculty of Professors and assistants and quiz masters. The attendance last session was 357, and in April a class of 92 was graduated. This is one of the best, if not the best, patronized school in the South.

We have two active medical societies. The Memphis Medical Society meets twice a month, and of the character of the meetings we leave the readers of the LANCET to judge. They are well attended and interesting. The Memphis Pathological Society makes up in vigor what it lacks in age, and to it especially is due the credit of having the office of city bacteriologist created. The proceedings of this body will also be presented in the LANCET. The meetings occur once a month.

We have two medical journals, one of which, the *Memphis Medical Monthly*, is well established and favorably known in this part of the country, and the other, which salutes you, starts under the most flattering auspices, and with an energetic corps of editors, who will endeavor to give it a high place in the estimation of the profession.

Memphis is the meeting place each year of the Tri-State Medical Association of Mississippi, Arkansas and Tennessee, a well attended society, which is making great progress in the character of its work. The meetings last three days, with three sessions each day. This year we are to be honored by having as our guests the Southern Surgical and Gynæcological Association, a meeting of which we will give a full account in these pages.

We have a small, but growing, Medical Library, which occupies a department in the Cossitt (public) Library. We wish we could speak more enthusiastically of this feature, but valuable though it be, the profession is almost indifferent as to its existence.

Individually, the members of the profession of Memphis are

the peers of any. The rolls of all the important societies, the columns of all the important journals, contain names of Memphis physicians, and the fame of some of them has spread to every nook and corner of the world in which progressive, scientific and latter-day medicine is represented.

Medicine was never in a more favorable condition for growth and development with us than now. We hope to be the humble means of doing a part in the great and good work, and will especially interest ourselves in behalf of all that tends to promote the interest of the physicians in the Mississippi Valley.

REPORTS OF SOCIETIES.

MEMPHIS MEDICAL SOCIETY.

STATED MEETING MAY 17, 1898. DR. T. J. CROFFORD, PRESIDENT.

Dr. G. G. Buford read a paper entitled, *Lesions of Peyer's Patches in Fevers an Incident, not a Cause.*

Dr. S. E. Rice contended that typhoid bacilli were found before putrefaction took place; not only in the patches, but also in the spleen, liver, blood, etc.

Dr. Buford replied that the lesions in Peyer's patches were secondary, resulting from over-vitality; that these lesions might result elsewhere than in the patches; that the presence of the bacteria was merely evidence of a lesion somewhere, and that the ptomaine generated by the bacteria was only an added fuel to the adynamic condition.

Dr. E. C. Ellett reported a case of *Tenonitis* in a colored girl of 16. The condition was of four weeks duration when first seen, and had been ushered in by a chill, and then a persistent temperature of 100 degrees to 101 degrees, and pain in the top of the head. Locally, there was great exophthalmus, with injected and chemotic conjunctivæ. Double ethmoiditis, with rupture into the orbits, was suspected, but excluded by freely opening the ethmoidal cells, and a diagnosis of double tenonitis made. Under hot applications and free exhibition of salicylate of soda the symptoms slowly subsided. This condition is an unusual one, and the case was reported on that account.

Dr. J. L. Minor recalled a case of *Double Tenonitis*, in which he obtained marked benefit from free incision of the chemotic conjunctivæ and the free administration of salicylate of soda. In monocular tenonitis he cures his patients in about ten days by the same treatment.

Dr. F. D. Smythe asked whether the tenonitis was attributed to a rheumatic diathesis.

Dr. Ellett, in closing, said that the condition is analogous to inflammation of serous membranes elsewhere, Tenon's capsule being a true serous membrane having a parietal and a visceral layer. He considered his case due to a rheumatic diathesis, as it began to improve immediately on the exhibition of salicylate of soda.

Dr. M.Goltman read a paper reporting operations upon three cases of *Ovarian Cyst*, showing the conditions of (*a*) hemorrhage into the cyst, (*b*) dragging of the pedicle, and (*c*) suppuration.

Dr. Buford asked whether there were casts in the urine of the last case, and contended the nephritis to be the result of the extremely acid condition of the blood.

Dr. T. J. Crofford said the paper seemed to be an honest report of cases. He had had some experience with rotation and dragging of the pedicle, and had seen a case entirely without pedicle, the tumor being fed by adhesions. He also related a case of hemorrhage into a large ovarian cyst which caused its rotation, together with intestinal strangulation at a point of adhesion. The bowel was black below this point, and there was great vomiting, which the operation relieved, but the patient ultimately died from ptomaine poisoning.

Dr. J. H. Reilly asked Dr. Goltman if he thought he was justified in operating upon the last case, with such a condition of the kidneys, and whether or no any autopsy had been made.

Dr. Goltman, in closing, said that Dr. Buford's contention only emphasized the experience of such men as Coe, Keith and Skene. He believes with these men, that an excessive acidity, long continued, cannot do otherwise than act as an irritant to the renal tissue, giving rise, in time, to granular kidney. He stated that these authorities report cases dying six and eight weeks after laparotomy from renal toxemia, when most careful examination failed to reveal any kidney lesion whatsoever. The kidneys in these cases had, no doubt, been crippled by the excessive acidity without undergoing

actual degeneration, the added shock of the operation being sufficient to cause suspension of renal function and death. He had never met with entire absence of pedicle, but said that such cases were quite common in the literature of the subject. He quoted Sutton, who says that rotation occurs in 10 per cent. of cases, giving a history of pregnancy. Rotation cuts off circulation more efficiently than dragging of the pedicle. The arteries being able to withstand the twisting more than the veins, blood enters the tumor, but cannot get out on account of the venous compression which results in hemorrhage. He reiterated that it was preferable to incise and drain a suppurating cyst when its removal was impossible or endangered the life of the patient. He claimed that he was justified in operating on the last case in spite of the casts and the presence of albumin, which were due, in his opinion, to pressure and renal irritation, as was borne out by the fact of the patient passing more urine, more urea and less albumin and casts than before the operation. He said that it was a sad mistake to confound kidney irritation with kidney disorganization, and that albumin and casts did not necessarily imply kidney disorganization—the quantity of urine passed and the amount of urea excreted being of greater diagnostic and prognostic importance. He said that his case died suddenly six weeks after operation, after sudden exertion, and that there had been no autopsy. Another similar case presenting he would hold himself culpable if he did not relieve the woman by operation.

Dr. Rice reported a case of *Ptomaine Poisoning* in a baby five months old, which simulated closely opium narcosis. The child was stupid, the temperature was 101° per rectum, the pupils were firmly contracted and did not react to light, the respirations 24, and the pulse 130 per minute. He washed out the stomach and gave two doses of castor oil, which relieved the little patient in twelve hours.

Dr. Frank A. Jones thought from the pulse, temperature and respiration the child had an attack of malaria of the congestive type.

Dr. Ellett asked Dr. Jones if his cases of congestive malaria got well after two doses of castor oil in twelve hours.

Dr. Smythe thought the child was under the influence of an opiate, probably administered intentionally by the nurse.

Dr. B. G. Henning said it was not uncommon to find cases of acute indigestion in small children bring about just such a condition as was found in Dr. Rice's case. He mentioned a case of this nature when 16 grains of calomel, a large dose of syrup of figs, and 6 ounces of castor oil failed to move the bowel in twenty-four hours. After this several enemas brought away some very large masses of constipated feces, and perfect recovery ensued in a few hours. With increasing experience he is becoming less and less inclined to call febrile conditions malarial, and to give less and less quinine.

Dr. Crofford mentioned a somewhat similar case, but which terminated fatally in about two days, the child not recovering from the stupor into which he had lapsed. He was inclined to believe it a case of congestion.

Dr. Buford believed that Dr. Rice was correct in the diagnosis and treatment of his case, and while he believed that these cases were cases of acute indigestion, it was from the resulting leucomaine poisoning that the stupor and other symptoms are produced.

Dr. Rice, in closing, said that he had very good reasons for thinking it was not a case of malaria.

THE DENVER MEETING OF THE AMERICAN MEDICAL ASSOCIATION.

The forty-ninth annual meeting of the American Medical Association at Denver, June 7–10, was attended by a representative of the LANCET in order to let our readers have an early and complete account of the meeting. From the expression of all who attended, we believe the meeting was as pleasant and profitable as any that has ever been held. The attendance was large, there being over 1500 registered.

The session was called to order by First Vice-President, J. M. Matthews of Louisville, the President, Geo. M. Sternberg, being detained in Washington by official business. His address was sent to the association and read by Col. Alfred Woodhull, Surgeon in the United States Army. In giving the true report of the proceedings,we are compelled to say that however carefully and thoughtfully prepared, the impression produced by this address was that it

was a long and tiresome rehash of well-known and commonplace facts.

Dr. Gihon, chairman of the Rush Monument Fund, reported $4400 in hand, which amount was trebled by subscriptions received at the meeting. The sum of $140 was raised by the Tennessee delegation, the remainder of her $2000 to be paid at the next annual meeting.

Tennessee was well represented by twenty delegates, and it was a source of pleasure to all her delegates to see the satisfactory, expeditious and dignified manner in which Dr. T. J. Happel of Trenton, Tenn., presided in his capacity as Fourth Vice-President over three of the general sessions. The following officers were elected:

President, Jos. M. Matthews of Kentucky.
First Vice-President, W. W. Keen of Pennsylvania.
Second Vice-President, J. W. Graham of Colorado.
Third Vice-President, H. A. West of Texas.
Fourth Vice-President, J. E. Minney of Kansas.
Treasurer, H. P. Newman of Illinois.

The Secretary, W. B. Atkinson of Pennsylvania, holds office permanently; a lamentable fact, since the freely expressed opinion at the meeting was that he has outlived his usefulness, and is a hindrance to the association's progress.

Dr. Happel was elected to the Judicial Council. The next meeting will occur at Columbus, Ohio, when the following addresses will be delivered:

Medicine, J. C. Wilson of Pennsylvania.
Surgery, Floyd McCrea of Georgia.
State Medicine, D. R. Brower of Illinois.

To dwell on all the notable features of the meeting is impossible. The discussion of appendicitis in the surgical section, prominently participated in by Drs. Keen and Murphy, was probably the feature of the meeting. All the sections were well attended and profitable, the section dinners and receptions extremely pleasant, and altogether the Denver physicians and the Denver people did all in their power to make the meeting a memorable one.

One of the most important actions of the meeting was the adoption of a resolution whereby the association will not recognize the diploma of a graduate of any school whose requirements are

less than the maximum recognized by the association (a four years course), nor will it accept as a member a teacher in any such schools. This takes effect January 1, 1899.

MEMPHIS PATHOLOGICAL SOCIETY.

STATED MEETING MARCH 5, 1898. DR. E. C. ELLETT, PRESIDENT.

Dr. Wm. Krauss read a paper on the *Etiology and Prevention of Yellow Fever*, and made a very interesting and satisfactory demonstration of the Archinard-Woodson test (a modification of the Wyatt-Johnston test for typhoid) for yellow fever. Dr. Krauss said that yellow fever was the prototype of the diseases of mixed infection, Sanarelli never having found the bacillus icteroides alone, but always associated with strepto- and staphylococci, the colon and proteus, and it is for this reason that it is only found in about 58 per cent. of cases.

The bacillus is found in the circulating blood, most constantly in the capillaries of the liver and kidneys, *never* in the intestinal tube. The best experiment animal is the dog; least of all, the cat.

Sanarelli, contrary to the popular belief that the disease was not contagious, has transmitted yellow fever to man by means of filtered dead cultures, producing all the classical symptoms, as well as the decided anatomical lesions.

This, Dr. Krauss said, fully establishes the specific character of the bacillus icteroides, and the specific clumping which takes place when a drop of diluted blood from a yellow fever patient is allowed to come in contact with a field of actively moving bacilli, is only additional evidence of its specific character, and explains well the conference of immunity.

He further said that the bacillus never liquefied gelatin; that it would grow well on all ordinary culture media; that it could be cultivated from a fragment of liver fresh from a yellow fever cadaver at a temperature of 37° C. for twelve hours; that morphologically it is a little rod 2–4 m.m. in length and ½–1 m.m. broad, with rounded ends, sometimes joined in pairs. It is smaller and shorter than the Eberth bacillus, and more nearly resembles the colon bacillus, has fewer flagella, which are usually only situated on one pole of the organism, and its motility is more wriggling than gliding. It is a faculative anerobe and saprophyte; does not resist the Gram

stain, thus differing from the typhoid and colon bacilli; dies in water at 60° C., or after being exposed to the direct rays of the sun for seven hours, and lives for a long time in sea water.

Yellow fever once established on a ship persists long and tenaciously; old and worn-out ships can hardly be freed from it. The common moulds Sanarelli found to be the great protectors of the bacillus icteroides. Here, then, said Dr. Krauss, have we the fomites of yellow fever, and as proving the parasitic behavior of this bacillus for moulds, he mentioned that a colony quite sterile can at once be revivified, nourished and multiplied by sowing in its vicinity spores of any sort of mould which, he further said, suggests the possibility of the existence, especially in localities where yellow fever takes root with vigor, of a specific mould hitherto unknown.

He has tried the serum test upon three cases he had seen ill with the disease last October, and also upon his own blood, which had been immunized in the epidemic nineteen years ago. He obtained distinct reaction in all, but not so distinct as he has been in the habit of getting in typhoid. He failed in obtaining reaction in control experiments which included one case of typhoid, two of recovered typhoid, and one of malarial blood.

He concludes as follows:

1. The work of Archinard and Woodson, and his own, demonstrates the practical value of the serum diagnosis in yellow fever.

2. That it may be utilized as early as the second day and be exceptionally present as late as nineteen years after the disease.

3. That a dilution of 1–40, with a time limit of one hour, is to be preferred for accuracy of diagnosis.

4. That the dried blood method is perfectly satisfactory.

5. That the serum diagnosis should be instituted in all countries where yellow fever may exist, or are occasionally visited.

6. That it is especially valuable at the beginning of epidemics in the diagnosis of early and doubtful cases.

Dr. Krauss demonstrated his new hemoglobinometer. Briefly, this is a volumetric specific gravity method. 2.5 c. c. of a mixture of chloroform and benzen, having a specific gravity of 1060 at 29° C., are measured into a test tube, a drop of blood from a capillary pipette blown into it under certain precautions, and then from a pipette graduated in hemoglobin percentages a chloroform-benzen mixture of 1000 specific gravity, and colored with

gentian violet, is discharged into the test tube until the blood sinks downward and moves indifferently in the mixture, showing the specific gravity to be the same as that of the mixture. The per cent. can then be read off from the pipette. The test must be made with temperature control, as the chloroform-benzen mixture has a much greater heat expansion than blood. To obviate this, olive oil and carbon tetrachlorid, glycerine, salt solution, and many other fluids were tried, but they all lack mobility, requiring stirring, which breaks up the blood. By introducing the per cent. pipette to the bottom of test tube, the violet diluent, by its lesser specific gravity, rises in the mixture, stirring it without breaking up the blood. In practice, the specific gravity is not the one indicated, but one which is equivalent to the indicated specific gravity. *If the fluid were blood*, at 80° F., a "1060" fluid will float 100% blood. The apparatus is especially valuable for low percentages, where the scale is very large; it is just here that the color tests fail. The author thinks the apparatus far more accurate and more easily manipulated than the expensive color tests, viz.: Fleischl's, Gower's, Henoque's.

PROGRESS OF MEDICINE.

Eclampsia, Ante Partum and Post Partum.—Edward P. Davis (*American Journal of Obstetrics, etc.*, April, 1898) says that it seems clearly demonstrated that toxins of unknown composition cause eclampsia. These bodies are not found in the urine of eclamptic patients during eclampsia, nor are they found in great quantities in any urine. If they are present in the urine the patient would not have eclampsia. The percentage of urea, however, in connection with the specific gravity and amount, is of value as a clinical index of the amount of waste successfully excreted. When this percentage is reasonably high the patient is not forming from it within her body poisonous compounds. In order to thoroughly search the body of an eclamptic patient for the cause of her disease every tissue of her body would have to be subjected to chemical and biological analysis before an exact answer could be given regarding the precise cause of this serious disorder. That eclampsia can be prevented by regulating the diet of the pregnant woman and stimulating her excretion is a fact too familiar to require com-

ment. An eclamptic patient can be made to excrete by the use of the hot pack and saline injections into the skin and bowel. Such treatment, if faithfully carried out, may save the patient from eclampsia; but if her tissues have been seriously damaged by the poison, she may recover from convulsions only to die from pulmonary gangrene or failure of the nervous centers. In these cases veratrum viride seemed of decided service. In the first case reported, Davis says it may be urged that immediate delivery was demanded. But delivery did not stop the convulsions, and valuable time would have been lost had it been attempted at once.

Conservative Surgical Treatment of Uterine Fibroids.—Wilmer Krusen (*Amer. Gyn. and Obstet. Journal*, April, 1898) describes the technique to be employed in the performance of myomectomy as follows:

First, the preparation of the abdomen by thoroughly scrubbing it with calcium chloride and sodium bicarbonate, then with alcohol and sterilized water. As there is always the possibility of the uterine cavity being opened in the procedure, it should be dilated, curetted and irrigated with an antiseptic solution prior to making the abdominal incision. This removes the diseased endometrium and drains the organ, thus favoring subsequent involution. As the mortality has been greater in those cases in which the uterine cavity has been opened, therefore every precaution should be taken. The abdominal incision should be made in the median line below the umbilicus, and the lower end of it should not approach the pubes too closely, as the bladder in these cases is often elevated. Adhesions to the parietes, intestines, omentum and other organs should be carefully divided, the tubes and ovaries examined, the uterus brought forward and delivered, and gauze pads packed inside the abdominal cavity to keep the intestines in place and to catch the extravasated blood. If the appendages are diseased, or the tumor is edematous or fibro-cystic in character, then the operator should perform supra-vaginal hysterectomy in preference. The number and position of the tumors having been ascertained, an incision into the uterine structure is made over the most prominent one, the white fibrous nodule is grasped with a double tenaculum, then with the finger and Allis dissector it is gently enucleated with as little injury to the uterine tissue as possible. As many incisions

may be made as are necessary to remove all the growths, though frequently several may be removed through the same opening, and unsuspected nodules found as the operation progresses. If much hemorrhage occurs, it may be temporarily controlled by encircling the neck of the organ with rubber tubing or by manual compression of the main vessels. Of course, in pedunculated growths the operation can be more easily and rapidly performed by transfixing and ligating the pedicle, if possible covering the stump with peritoneum to prevent future adhesions. Greig Smith has observed "that uterine stumps do not become so quickly quiescent as ovarian stumps," hence every precaution should be taken to prevent their begetting trouble. After the enucleation is completed hemorrhage should be permanently controlled by ligating the individual vessels when possible, which prevents the bleeding independent of the retraction of the vessels and shrinking of the uterine fiber, and by rows of buried catgut sutures placed from the bottom of the wound upward in succession, bringing the tissues closely together and permitting no space for the accumulation of blood. Finally, the peritoneal surfaces are carefully approximated by superficial sutures of fine silk or catgut.

Conservatism of the Ovary in Hysterectomy and Hystero-Myectomy.—The *American Gyn. and Obstet. Journal*, May, 1898, abstracts from H. A. Kelly's article in the *British Med. Jour.* on conservatism of the ovary in hysterectomy and hystero-myectomy. He speaks of a growing belief that the ovary, in addition to its function of evolution, secretes a substance which is absorbed and consumed in the animal economy, and which is necessary to it in retaining its physiological balance. Martin says: "It is probable that the ovaries, like the liver and thyroid gland, modify the blood circulating through them, and add to the blood some peculiar product of their metabolism. It may be that some of the climacteric symptoms are due to the loss of substance from the system."

An active principle called "spermin," found in sperm by Schreiner in 1878, has been found in the thyroid and thymus glands, and in the spleen, ovaries, testes and blood, from all of which it has been extracted in the form of an insoluble spermin phosphate. Poehl found this substance as a normal physiological constituent of the prostate, testicles, ovaries, thyroids, thymus, pancreas and spleen,

as well as in the blood. Spermin is a leucomaine, believed, up to now, to be a product of the retrogressive metamorphosis of an albumin, either injurious or indifferent to the organism. It is now shown that spermin possesses most valuable functions in connection with the activities of living beings. Spermin is an active oxidizing agent, assisting by its catalytic action in restoring the oxidizing power of the blood without having recourse to the oxygen derived from the air. It has also shown a favorable action when given to patients suffering from diabetes, scurvy, etc., in which such auto-intoxications are manifestly the result of an accumulation of retrograde products. Injected subcutaneously it acts as a physiological tonic in all kinds of depressed conditions, such as neurasthenia, anæmia, etc.

The author has noticed a remarkable diminution in the distressing nervous symptoms of the menopause, since he began to leave ovaries in. In some cases there were no bad symptoms, and in none were there greater discomforts than slight flushes of heat.

The technique of the operation is simple; the ovaries are the important organs to conserve, and the uterine tubes may be removed or left in as the operator may decide best. The operation is easier if the tubes are left, and the enucleation is begun by tying off the broad ligament at the uterine corner, including the isthmus of the tube and the utero-ovarian ligament in the first tie, tying the round ligament next, and then exposing the base of the broad ligament, ligating the uterine vessels, amputating the uterus at the vaginal junction, clamping the uterine vessels of the opposite side, and then pulling the uterus up and out and ligating the round ligament, the tube, and the ovary at the opposite corner. Inflamed or diseased ovaries or tubes were not retained.

A Discovery in the Physiology of the Ear.—W. F. Cole, of Waco (*Laryngoscope*, May, 1898), announces as the result of observation in fourteen suitable cases "that sound passes, not through the fenestra ovalis, but through the fenestra rotunda." He was led to suspect this by the observation that the hearing of a patient in whom the drum and ossicles had been removed, was greatly improved by shutting of the attic and antrum with fluid or cotton pledgets (covering the oval window), and concentrating sound on the round window, and greatly reduced by covering the round win-

dow. A thin rubber tube, so placed as to convey sound to the round window (niche), is of great value in improving the hearing in these ears which have lost the drum. Cole thinks "the functions of the ossicles are to regulate the tension of the drum, and perhaps that of the labyrinthine fluid, and incidentally that of the membrane of the rotunda."

[This paper, in connection with one by Goldstein presented to the Western Ophthalmologic and Oto-Laryngologic Association, in which he reported the case of a boy with material retention of audition after complete exfoliation of the cochlea, would indicate the necessity of a careful study of the physiology of hearing, and possible revision of our present ideas.—Ed.]

The Management of Hernia in Infancy and Childhood.—This article by Wm. B. Coley (*Archives of Pediatrics*, April, 1898) is of very considerable interest to the general practitioner. He advocates the use of a truss in preference to operation, save in femoral hernia, in hernia made of irreducible or adherent omentum, and cases which are liable to be neglected. There should be no delay in providing a support, as strangulation has occurred as early as the sixth week. He believes that many cases are cured by a well fitting truss, worn day and night for two years. At the end of that time, if the hernia is still present, he does not think a permanent cure likely to take place and advises a radical operation. He reports a mortality of one-quarter of one per cent. in some three hundred cases operated on.

Schott Treatment of Heart Disease. — Victor Neeson (*Amer. Gynec. and Obstet. Journal*, May, 1898,) throws some valuable side lights on the treatment of heart disease as practiced at Mannheim. He saw all the distressing symptoms disappear one after another, and this with no other medicine than hygienic living, salt bathing, and graduated exercise.

He narrates as a typical case that of an Englishman, 50 odd years old, heavy and plethoric, short of breath, blue of face, gouty and helpless. He was wheeled around in an invalid chair when he arrived. He could climb the Johannisberg when he left. His period of stay was four months. He had mitral and aortic insufficiency, dilatation and aortic atheroma, to say nothing of gout, dyspepsia, enlarged liver, etc. He was a patient of Dr. Schott. The first

thing was a reduction in diet. He was only allowed food that was readily digested, and just one-half the quantity he wished to have. No sweet wines, liquors or champagne, only the sour Rhine wines and one cigar a day. The salt baths began the first day, first well diluted with fresh warm water, in which he remained only five minutes, gradually increasing in strength and duration. After the baths had continued for a week, he could walk a little, and then exercises were begun. He began walking five yards a day; he ended by walking five miles. His routine of work then was as follows: rising at 8, breakfasted on soft-boiled egg and weak coffee with zwieback at 8.30; bathed at 9.30; returned at 10; slept an hour, then exercised for an hour; dined at 1 p.m.; rested an hour after dinner; went for a walk, or to concert; supped at 6; retired at 9 or 10.

There are seven springs in the vicinity of Mannheim, three of which are used for bathing and four for drinking. Of those for bathing one is rarely used, the four varieties of baths being prepared from the other two, the "Grosser Sprudel" or No. 7, and the "Friederich Wilhelm's Quelle" or No. 12. The first bath is a simple brine freed from the carbonic acid and diluted with fresh warm water. 2 is a bath of normal temperature of spring, but with most of the carbonic acid abstracted. 3, the Sprudel bath is charged with salts and carbonic acid, just as it emerges from the earth. 4, the Strom Sprudel, same as No. 3, except that there is a constant flow of water in and out, thus keeping up the full amount of carbonic acid. These baths are given in the order of their stimulating properties, as none but a person of a vigorous condition could take the Strom Sprudel without ill effect.

The baths are given to diminish the frequency and increase the force of the pulse beat. The wonderful results from this treatment are accomplished by restoring compensation. No claim is made for repairing twisted valves or dilated vessels.

Use of the Farinacea. — Dr. D. J. Milton Miller (*Archives of Pediatrics*, April, 1898) comments on the habit of feeding children between twelve and thirty months of age on an indiscriminate starchy diet, considering it the most usual cause of the gastric disorders prevalent at that age. He thinks that the food at that time should be largely nitrogenous with a minimum of carbohydrates,

the staple being milk, or milk mixed with farinaceous gruels and jellies, with beef juice and broths, and after the eighteenth month, as advised by Holt, rare or raw scraped beef or mutton, and occasionally, eggs. The fruit juices, such as orange juice and baked apple, should form part of the dietary from the fifteenth month on, and even earlier if sterilized milk is used.

Schleich's Solutions for General Anæsthesia.—

No. 1. Chloroform, 1½ oz.; petroleum ether, ½ oz.; sulphuric ether, 6 oz. Boiling point, 38° C.

No. 2. Chloroform, 1½ oz.; petroleum ether, ½ oz.; sulphuric ether, 5 oz. Boiling point, 40° C.

No. 3. Chloroform, 1 oz.; petroleum ether, ½ oz.; sulphuric ether, 2⅔ oz. Boiling point, 42° C.

These are true solutions, not mixtures. The patients recover very rapidly from No. 1, less so from No. 2, and least rapidly from No. 3. The solutions are best administered with a mask, one drop being dropped on the mask each second. The anæsthesia is safe, no ill effects being noted in one thousand cases. In 4 per cent. of the cases slight albuminuria was seen, but no death has ever been recorded.—*Va. Med. Semi-Monthly.*

Traumatic Rupture of the Urinary Bladder.—McLaren (*Jour. of Am. Med. Assn.*) reports a case of extraperitoneal rupture of the urinary bladder, with fracture of the pelvis. There was extensive extravasation of urine over the left Poupart ligament, with fracture of the left pubic bone. An incision was made over the extravasation and the bladder drained through the perineum. A broad hip band was applied to steady the fractured pelvis. His recovery was complete, though a large retroperitoneal abscess reaching to the left kidney had to be drained subsequently.

Cervical Tubercular Adenitis.—Laplace (*The Journal of the Am. Med. Assn.*, June 4, 1898), advocates the entire removal of all tuberculous glands of the neck except when associated with pulmonary tuberculosis, believing this "the safest way to remove this tendency to further tubercular infection." * * *

THERAPEUTIC NOTES.

FOR AMENORRHŒA:

℞ Strych. sulphat, gr. ii
Acid oxalic, gr. x
Mangani lactat,
Ferri peptonat, āā ʒ ii
Ext. colocynth co. ʒ ss

M. Div. in pulv. No. xl.

Sig.: One powder, twice daily, after meals.

OINTMENT FOR VARICOSE ULCER:

℞ Acid carbolic, ʒ ss
Acid borici, ʒ iiss
Camphoræ, ʒ ii
Ichthyol, ʒ v
Ol. amygdalæ dulc. ʒ iiss
Ung. zinci oxidi, ℥ iiiss

M.

Sig.: For external use.

FOR URTICARIA:

℞ Menthol, gr. xl
Chloroform,
Ether,
Spts. camphoræ, āā ʒ ii

M.

Sig.: For external use as a spray or lotion. The affected part should then be dusted with powdered starch or oxide of zinc.

FOR ASTHMA:

℞ Sodii iodidi,
Tinct. stramonii, āā ℥ iss
Ext. glycyrrhizæ, ʒ i
Syr. scillæ, ℥ i
Aquæ dest., ℥ viii

M.

Sig.: One tablespoonful three or four times a day.

A DIURETIC POWDER:

℞ Pulv. digitalis,
Pulv. scillæ, āā gr. xv
Potass nitratis, ʒ iiss

M. Div. in pulv. No. xx.

Sig.: Four to six powders a day, to be taken in cachets.

ANTI-NEURALGIC POWDERS:

℞ Quiniæ hydrobrom. gr. xv
Ext. nucis vom. grs. iii
Phenacetine,
Exalgin, } āā grs. vi
Pulv. ipecac et opii,

M. Ft. pulv. No. vi.

Sig.: Two powders a day, before meals

OINTMENT FOR BLACKHEADS:

℞ Ichthyol,
Bismuth subnit,
Ammon. mercury, āā ʒ i
Vaseline, ʒ x

M.

Sig.: Apply at night.

NEWS AND NOTES.

Dr. W. L. Estes, who contributes the paper on "Surgical Shock" in this issue of the Lancet, was born and reared in this portion of Tennessee. After obtaining his medical education in New York, he received the appointment of Director and Surgeon to St. Luke's Hospital at South Bethlehem, Pa., which position he has now held for the past eighteen years. Dr. Estes has contributed many valuable articles to current medical literature, notable among which are the papers on the "Treatment of Fractures" in recent numbers of the *International Journal of Surgery*.

Dr. Nicholas Senn has been appointed a deputy Surgeon-General, with rank of Lieutenant-Colonel.

We are indebted to Dr. J. F. Hunter, of Jackson, Miss., the Secretary of the Mississippi State Board of Health, for the following table of the results of the examinations by that board in May, 1898. We would call attention to the fact that these figures represent the total number of applicants, graduates and under graduates.

School of Graduation or Attendance	Passed	Rejected
Memphis Hospital Medical College,	29	15
Louisville Medical College,	1	8
New Orleans Medical College,	2	3
Atlanta Medical College,	1	...
Vanderbilt,	1	2
University of Nashville,	4	1
University of the South,	2	...
Barnes Medical College,	1	2
Meharry Medical College,	...	2
Ohio Medical College,	1	...
St. Louis Medical College,	...	1
Rush Medical College,	1	1
Illinois Medical College,	1	...
Kentucky School of Medicine,	1	...
University Missouri,	...	1
Tulane,	20	10
Bellevue,	1	...

We are indebted to Dr. T. J. Happel, of Trenton, Tenn., Secretary of the Tennessee State Board of Medical Examiners, for the following summary of the examinations held by that board April, 1898:

School of Graduation	No. Examined	Passed	Rejected	Highest Per cent.	Lowest Per cent.
Vanderbilt University,	11	10	1	89	50
University of Nashville,	22	20	2	91	65
University of Tennessee,	5	4	1	95	40
Tennessee Medical College,	5	5	...	85	75
Meharry Medical College,	2	1	1	75	67
Memphis Hosp. Med. College,	8	7	1	88	71
Chattanooga Medical College,	4	3	1	89	50
University of Louisville,	5	5	...	85	75
Louisville Medical College,	1	....	1	....	65
Hospital College of Medicine,	2	1	1	80	62
Kentucky School of Medicine,	1	1	....	75	....
Jefferson Medical College,	1	1	....	75	....
University of Pennsylvania,	3	3	...	96½	75
Bellevue Hosp. Med. College,	1	1	....	80	....
Baltimore College P. & S.,	1	1	....	78	...
Baltimore Medical College,	2	2	....	78	77
Southern Medical College,	2	2	....	85	78
Tulane University,	1	1	....	75	....
University of Virginia,	1	1	....	90	....
University of Michigan,	3	3	....	89	79
Missouri Medical College,	1	1	....	92	....
Milwaukee Medical College,	1	1	....	79	....
Univ. Med. College of Kansas City,	1	1	....	85	....
Non-graduates,	13	6	7	88	34
Total,	97	81	16		

THERE has been a union of the Medical Department of the New York University and Bellevue Hospital Medical College, and the new institution will be called, it is said, "The University and the Bellevue Hospital Medical College."

Dr. D. M. HALL of Memphis holds the position of Assistant Surgeon in the Second Regiment of Tennessee Infantry.

THE Ohio Medical University and the Starling Medical College, both of Columbus, Ohio, are endeavoring to effect a consolidation, the new institution to become the Medical Department of the State University.

Dr. Frank M. Rumbold of St. Louis, editor of *The Laryngoscope*, has gone to the front as captain of artillery, with the Missouri National Guard. In his absence the whole editorial work of the journal is being done by his co-editor, Dr. M. A. Goldstein.

Dr. John G. Clark, the resident gynæcologist at Johns Hopkins Hospital, has recently returned from a trip to Europe. Dr. Clark's recent study of drainage in abdominal surgery, as well as his other work in his special line, has made him well known in gynæcology.

Dr. H. A. Hare of Philadelphia, from whom we have the pleasure of presenting an article in this issue, delivered the address on Medicine at the meeting of the Ohio State Medical Society at Columbus in May, and, in the absence of Col. E. C. Brush, responded to the toast, "The Soldier Doctor," at the annual banquet of the Society.

BOOKS AND PAMPHLETS RECEIVED.

A Study of the Blind. By F. Savary Pearce, M.D. (Reprint from *International Medical Magazine*, March, 1898).

A Study of the Ophthalmic Changes in Chlorosis, Pernicious Anæmia and Leucocythæmia. By C. A. Oliver, M.D. (Reprint from the *Annals of Ophthalmology*, January, 1898).

A Case of Tenonitis. By E. C. Ellett, M.D., Memphis, Tenn. (Reprint from *Ophthalmic Record*, May, 1898).

Experimental Work on the Penetrability of Vaporized Medicaments into the Air Passages. By Homer M. Thomas, A.M., M.D. (Reprint from *Journal of the American Medical Association*, May, '98).

The Mimicry of Tumor of the Brain by Chronic Nephritis. By Chas. W. Burr, M.D., of Philadelphia. (Reprint from the *Philadelphia Journal*, 1898).

A Case of Chorea, with Acute Delirium, Occurring in the Course of Scarlatinal Bright's Disease. By Chas. W. Burr, M.D., of Philadelphia. (Reprint from *Archives of Pediatrics*, January, 1898).

The History of the X-Rays. By M. Goltman, C.M., M.D., of Memphis, Tenn. (Reprint from *Memphis Medical Monthly*, July, 1897).

A Case of False Hermaphroditism. By M. Goltman, C.M., M.D., of Memphis, Tenn. (Reprint from the *American Journal of Obstetrics and Diseases of Women and Children*, vol. xxxvi, no. 2, '97).

Anœsthesia of the Trunk in Locomotor Ataxia. By Chas. W. Burr, M.D., of Philadelphia, Pa. (Reprint from the *Journal of the American Medical Association*, April 12, 1898).

Hysteria in Children. By Chas. W. Burr, M.D., of Philadelphia, Pa. (Reprint from the *Journal of the American Medical Association*, December, 1897).

Atlas of Legal Medicine. By Dr. E. Von Hofmann, Professor of Legal Medicine and Director of the Medico-Legal Institution at Vienna. Authorized translation from the German. Edited by Frederick Peterson, M.D. Assisted by Aloysius O. J. Kelly, M.D. 56 plates in colors, and 193 illustrations in black. Philadelphia, W. B. Saunders, 925 Walnut st., 1898.

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ORIGINAL ARTICLES.

A CONSIDERATION OF THE PHYSICAL SIGNS OF PLEURAL EFFUSIONS.

BY ALOYSIUS O. J. KELLY, A.M., M.D.,
PHILADELPHIA.
Instructor in Physical Diagnosis, University of Pennsylvania; Adjunct Professor of Pathology, Director of the Neurologic Laboratory, and Bacteriologist, Philadelphia Polyclinic and College for Graduates in Medicine; Visiting Physician to St. Mary's and St. Agnes' Hospitals; Pathologist and Bacteriologist to the German Hospital, Philadelphia.

The effusion of a greater or less quantity of serum into one or the other pleural cavity is a condition, the diagnosis of which depends solely upon the recognition of the physical signs to which it gives rise. Certain manifestations of disease may lead us to infer the existence of a pleural effusion, but in the absence of physical exploration the diagnosis is beyond the range of human possibilities. The subjective sensations of the patient, such as pain, and the more objective manifestations, such as cough, which increases the intensity of the pain, slight expectoration, dyspnea, and fever, may furnish the clue to the existence of some intrathoracic disturbance, but these symptoms are of minor importance as compared with the more definite evidence secured by the physical examination. The physical signs of the condition and their various modifications have long been the subject of careful study and considerable discussion, particularly on the part of American and French clinicians. Notwithstanding this fact, however, there are still some

questions pertaining to the physical phenomena presented by pleural effusions, upon which there is lacking an unanimity of opinion. It is for this reason, despite the triteness of the subject, that a consideration, from time to time, of the physical signs of the condition may not be unattended by profit. The most valuable of the methods of physical exploration at our service for the diagnosis of pleural effusion are palpation and percussion. Naturally, before a pleural effusion can be detected by these means of investigation, it must have attained a certain size. A considerable number of experiments have been performed by injecting the pleural cavities of cadavers to ascertain the smallest quantity of fluid capable of recognition by physical examination. These have disclosed the fact that quantities less than 120 c. cm. in a child, and less than 400 c. cm. in an adult do not give rise to physical signs upon which any diagnostic value can be placed. Thus many cases of small effusion elude detection, and we need but remark the fact that many cases of even excessively large effusion develop and exist a considerable time, unattended by any marked subjective manifestations. Although we have mentioned the greater relative importance of palpation and percussion, in the physical exploration of a case it is quite appropriate to proceed in an orderly and systematic manner. To facilitate the study of the physical signs, it is quite feasible and desirable to divide pleural effusions, according to their size, into those which we may arbitrarily designate small, moderate, and large. In the small effusions, the signs appear only behind; in the moderate, they appear also at the lateral and antero-inferior regions of the chest. Large effusions, on the other hand, almost or entirely fill the pleural cavity and produce marked displacement of the adjoining viscera.

A case of pleuritis having progressed to the stage of effusion, the patient will commonly be noted resting in bed on the affected side—this so that the lung of the unaffected side may be unimpeded in its movements. This posture is in contrast to that assumed by patients with dry pleurisy, or those in the early stage of a sero-fibrinous pleuritis. These latter prefer to rest upon the healthy side, so as to avoid increasing the pain of the affected side. The transition from the dry stage to the stage of effusion can often be surmised by the alteration in the posture of the patient. The constancy of this posture depends upon the size of the exudate

and the respiratory requirements. The diseased side of the thorax takes little or no part in the respiratory movements. This non-implication is especially evident in the lower portion of the chest, but with augmentation in the amount of the fluid it becomes apparent also in the upper. In those cases in which the affected side does partake to some extent in the respiratory excursions, these latter often commence later than do those of the opposite side, and are not uncommonly irregular and subject to interruptions. Exceptionally, there may be noticeable an inspiratory retraction of the epigastrium.

There is further manifest an increase in the size of the affected half of the thorax, especially of the postero-inferior and lateral inferior regions. The hypochondrium is particularly prominent. The suspected increase in size upon naked eye examination becomes an assured fact upon the employment of mensuration. A judicial care must, however, be exercised in the interpretation of the results attained by mensuration. It is to be borne in mind that normally the right side (in right-handed persons at least) is 1 to 2 cm. greater in circumference than is the left. In conditions of effusion, the ectasis may result in a difference of from 3 to 5 cm. The latter, however, is rather exceptional. A case of pleural effusion, in which the right side was 4.5 cm. greater in circumference than the left, was recently under my care in St. Agnes' Hospital. In addition, we must remember that in children, as a result of compensatory emphysema, the non-affected side has been found more distended than the side of the pleural effusion. A good idea of the degree and extent of the distention may be obtained by the employment of the cyrtometer. Although thus of limited value in the determination of the actual size of a pleural effusion, mensuration may be serviceably employed to estimate the variations which occur from time to time in the amount of the fluid. But here also it has limitations, as we may not infer, because the measurements remain for a time unchanged, that the exudate is not being absorbed. The diaphragm is first favorably influenced by the absorption of the fluid, later the size of the chest tends to return to the normal. The degree of the distention of the thorax bears a direct relation to the size of the effusion and the flexibility of the thoracic walls. As a consequence of this, effusions of similar size give rise to much more bulging in the young than in the adult.

The skin of the thorax of the affected side, as compared with that of the opposite side, is pale, shining, tense, and not so readily lifted up in a fold. The shoulder and the acrominal end of the clavicle become elevated; the nipple and the scapula are further removed from the median line; there may occur a slight scoliosis with the convexity toward the affected side; and the sternum is not uncommonly "out of plumb." This latter is evident upon drawing a line from the episternal notch to the symphysis pubis. Normally, this passes through the center of the sternum. In cases of pleural effusion, however, the xyphoid cartilage will thus be found deflected to the side of the effusion.

The respirations are, as a rule, much increased in frequency. This is the result of various factors, of which the following may be mentioned: the compression of one lung and consequent reduction in the available pulmonary respiratory surface—the attempt being made to counterbalance this defect by increasing the frequency and rapidity of the breathings; the pain and constant shallowness of the respirations; the dislocation of the heart and consequent embarrassment to the circulation and compression of the lung of the unaffected side; the depression of the diaphragm; the partial paralysis of the intercostal muscles, the result of serous infiltration; and fever. There is usually exaggerated breathing of the unaffected side. In cases of very large effusion, orthopnea may ensue.

Palpation, however, in addition to confirming the evidences of effusion already attained by inspection, furnishes much more important data than these as yet mentioned. These are relative to the vocal or tactile fremitus and to the dislocation of adjacent viscera. In the determination of the latter, however, we employ also percussion. Over that part of the thoracic wall beneath which fluid is situate, the vocal fremitus is much diminished or entirely absent. Even relatively thin layers of fluid are capable of diminishing to some extent the vocal fremitus, but marked diminution does not ensue unless the layer of fluid be 2 to 2.5 cm. in thickness. Naturally the thicker the layer of fluid and the thicker also, or the more inspissated the fluid, the less the fremitus. This diminution in the intensity of the fremitus is always more marked over the postero-inferior region of the thorax than elsewhere, as in that region, with few exceptions, no matter what the size of the exudate, its diameter is greatest. Higher upward its thickness lessens, and

pari passu the fremitus increases. The fremitus over the lung above the effusion may be normal or even increased if the lung be much compressed. We should bear in mind that the fremitus is greater over the right side, especially the right apex anteriorly, than it is over the left side. If one carefully palpates with the tips of the fingers, or preferably with the ulnar surface of the hand instead of with the palmar surface, we can appreciate the upper limit of diminished or absent fremitus, and thus inferentially the height of the fluid. This delimitation is all the more readily accomplished as immediately above the fluid there is usually an area of increased fremitus, the result of compression of the lung. If within the limits of the effusion the lung be here and there adherent to the thoracic wall by adhesions, at these places the fremitus may be still preserved or even increased in intensity. The careful investigation of the vocal fremitus is of practical value in that it enables us to avoid circumscribed adhesions in puncturing the wall of the thorax for the withdrawal of the effusion. In addition, palpation enables us to determine increase of the resistance of the affected half of the chest, and by care in the examination we may determine pretty accurately the height of the fluid. Rarely fluctuation may be appreciated by palpating with two fingers of the one hand in the same or adjacent interspaces, or by bimanual palpation. Edema of the affected side of the thorax is not uncommon. By some it is said to be diagnostic of purulent effusion, but this statement is not in complete accord with the facts. Edema may ensue in cases of serous effusion if the amount of fluid be great enough to cause sufficient pressure on the azygos and hemiazygos veins. To the inflammatory edema extending through the chest wall from the inflamed serous membrane, we have thus added the passive edema of venous congestion. Pulsation of the affected side has been noted in some instances. With very few exceptions, notably the observations of Geigel, Eichhorst, and possibly also Heyfelder, pulsation has always been found in connection with left-sided, particularly purulent, effusions. Cases of pulsation of serous effusions have, however, been recorded. The requisites for the occurrence of this pulsation are a heart's action which is not too weak, a large exudate, and paresis of the intercostal muscles.

Quite characteristic physical signs result when the effusion has attained a size sufficient to give rise to displacement of the neigh-

boring viscera. Notwithstanding that the development of such phenomena presupposes a certain size of the exudate, this latter alone is not of determining influence. The motility of the adjoining viscera themselves is of great importance. Be the viscera fixed as a consequence of adhesions, there may be no dislocation despite the presence of a very large effusion. The earliest manifestations of displacement are commonly noticeable in connection with the heart. If the exudate be left-sided, the displacement may be so marked that the cardiac movements come to be appreciable to the right of the sternum. The heart is in general in toto pushed to the right. A rotation of the heart on its long axis and a displacement of the apex into the right thorax occurs only exceptionally. As a result of the displacement, the palpable portion of the heart which pulsates to the right of the sternum is usually the right edge of the heart, and not the apex. If the exudate be right-sided, the apex of the heart will be detected displaced to the left as far as the mamillary line, or even as far as the midaxillary line, and is usually lower than normal, in the sixth or seventh intercostal space, as a result of depression of the diaphragm. In addition to displacement of the heart, we notice displacement of the liver and of the spleen and stomach — the former if the effusion be right-sided, and the two latter if it be left-sided. The displaced liver may project a varying distance below the margin of the ribs and be distinctly palpable. In cases of excessively large effusion the diaphragm may project, as an inverted dome, into the abdominal cavity, and be appreciated in the hypochondrium as a roundish, prominent, semi-fluctuating tumor. Beneath this the entire liver may be palpable. If the effusion be left-sided, the stomach and spleen are naturally displaced downward. The area of stomach tympany can be outlined lower down than normal, as may also the area of splenic dullness. The displaced spleen is, however, not so apt to be palpable as is only slightly enlarged spleen. The reason for this is probably to be found in the fact that the spleen, enlarged from any cause whatever, is displaced downward toward the palpating hand by the inspiratory descent of the diaphragm, whereas the spleen simply displaced by a pleural exudate remains immobile during the respiratory excursions, because an inspiratory descent of the diaphragm no longer occurs.

Without doubt the most important evidences of pleural effusion

are elicited by percussion. Over that part of the thoracic wall beneath which fluid is situate, the percussion note is dull, and of such importance is this phenomenon that the careful clinician does well to forego the diagnosis of pleural effusion in the absence of dullness on percussion. But despite the well-known fact of the occurrence of dullness on percussion, there are still some questions in connection with the percultory phenomena of pleural effusions the subject of discussion. These are particularly those which relate to direction of the upper border of dullness, and to whether or not this upper border varies with change in the posture of the patient. Clinicians of equal ability have promulgated divergent views with respect to these questions, and others have devoted little attention to them. These diverse views can only be reconciled by assuming that the methods of percussion have varied, that sufficient time has not been given in some cases for possible alterations in the height of the fluid to occur, and that the phenomena vary in different cases. As reliable percultory results can be attained only by care in percussion, I can heartily recommend Sansom's pleximeter. Over small effusions the note will be found only dull, whereas over larger ones it is absolutely flat, the degree of the flatness depending upon the thickness of the layer of fluid. Other things being equal, it is therefore more marked at the lower portions of the chest than higher up. Experiments on adult cadavers have revealed that layers of fluids less than 1.5 cm. in thickness engender a dullness hardly appreciable; those more than 5 cm. give rise to absolute flatness. In small effusions, the area of flatness will be found at the postero-inferior region of the chest. The upper border of this area, which may be but two or three inches in height, will be found represented by a curved line, with convexity upward. It begins at the vertebræ, curves slightly upward and outward, to fall rather abruptly at the line of the angle of the scapula or the posterior axillary line. With increase in the amount of the exudate, there occurs an increase in the extent of this flat area. It increases in height and extends further forward. It will, however, frequently be noticed that the increase is more in height than forward, and that close to the vertebral column an area of pulmonary resonance can be made out (Fig. 1). As the effusion becomes still greater, we commonly note the development of the "letter of S curve," more accurately described by Calvin Ellis following Damoiseau, and given the designation

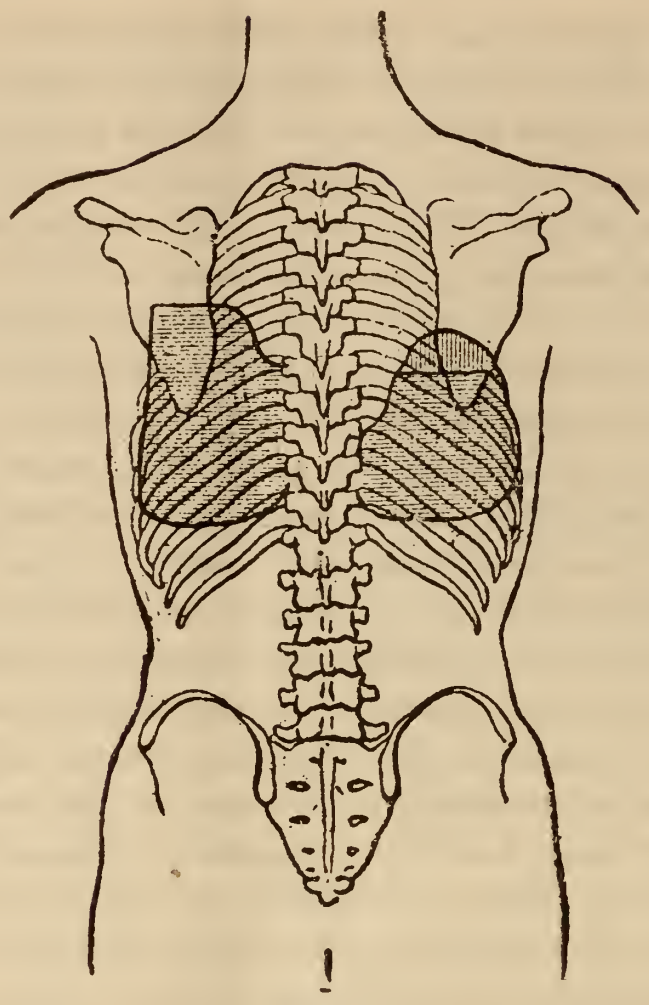

FIG. 1.

Diagram to show the line of the upper level of dullness in moderate effusions. The upper area to the right indicates a rather common region of impaired resonance. (After Pitres.)

indicated by Garland. The dullness remains at its former level posteriorly, or mounts a little higher. At, or a little posterior to the posterior axillary line, it rather abruptly rises to a point high in the axillary, and falls again at the anterior axillary line. If the effusion be still larger, the line of descent extends to the mammillary line or follows the course of the fourth or fifth rib. When the effusion has become very large, there is no longer any characteristic line to the upper limit of the dullness and no importance can be attached to what may be detected. Nor is the upper border easy of determination. Whitney describes what he terms the "concave curve" of large effusions in contradistinction to the "convex curve" of small effusions. The former beginning at the sternal end of the second or third rib, passes outward and upward over the clavicle and shoulder, then downward and inward to the fifth

or sixth thoracic vertebra. We have further to mention, with regard to large effusions, that they may be so great as to give rise to a lateral displacement of the anterior mediastinum. In left-sided effusions, therefore, we may recognize dullness as far as the right edge of the sternum, and in right-sided effusions the opposite, —dullness to the left edge of the sternum. In certain, rather few, cases of moderate effusion, the upper limit of the dullness will be represented by a diagonal line, which has its highest point posteriorly, and gradually descends to the anterior axillary line, or a little further forward. In exceptional, particularly ambulatory, cases, the upper border of the dullness may be horizontal. Increased resistance is also appreciable by percussion.

The note elicited by percussion over the lung above the effusion varies under different circumstances according to the size of the exudate, and is different in front and behind. Toward the median line of the body posteriorly, over a moderate effusion, it is usually quite dull. This dull area (Fig. 1), which is triangular in shape, and intervenes between the "letter of S curve" and the vertebral column, has been termed by Garland the "dull triangle."

This author suggests that its delimitation, as also that of the upper border of the dullness due to the effusion, will be much facilitated by directing the patient to take a few inspirations prior to the physical examination. Above this area the percussion note is similar to that which obtains in front. Here it is markedly tympanitic. At first it is low in pitch, but as the fluid increases in amount, it becomes high-pitched. This tympanitic resonance, termed Skodaic resonance or tympany, results from diminution of the pulmonary tension consequent upon compression of the lung. The transition from low-pitched tympany to high-pitched tympany is commonly considered indicative of commencing compression. When the fluid is excessive in quantity, and the compression of the lung extreme, the percussion throughout the entire anterior, lateral, and posterior surfaces of the chest may be absolutely flat. This is in part due to the effusion, in part to the extremely compressed lung. It is important in this connection to bear in mind the fact that we may not infer the presence of a large quantity of fluid because dullness extends high up anteriorly and posteriorly. If a lung has become at least partially adherent to the thorax through fibrous bands, and if it be at the same time somewhat

indurated through previous disease, it naturally cannot be so much compressed as a completely healthy lung. Under such circumstances even a relatively small quantity of fluid may reach a considerable height. Of the truth of this assertion abundant proof is furnished by necropsies and by clinical "tappings," in many instances of which, despite the height of the dullness, but small quantities of fluid can be withdrawn.

When the effusion is so excessive that dullness extends over the entire side of the chest, and the compression of the lung complete, the conditions necessary for the production of William's tracheal tone are present. This is a dull tympanitic sound appreciable normally over the trachea. In these cases of pleural effusion, by heavy percussion, it may be elicited over the first or second intercostal space, because the excessive compression of the lung permits of the transmission of vibrations from the large bronchi or trachea. It is more frequently found in the left side than the right. In addition, this tone manifests Wintrich's change of sound; that is, its character alters when the patient opens and closes his mouth. If the patient open his mouth, the sound is louder, more distinctly tympanitic, and higher in pitch. If his mouth be closed, the note is less loud, not so markedly tympanitic, and lower in pitch. Less rarely if the percussion stroke be strong, sharp and short, the note will possess a more or less metallic quality—the cracked pot sound or *bruit de pot fêlé*.

Traube and Frærtzel years ago directed attention to a sign of importance in the diagnosis of left-sided pleural effusions. This is a diminution in the size of, or a complete disappearance of, Traube's semilunar space. This is an area limited medianly by the left lobe of the liver, above by the lower border of the cardiac dullness and the pulmonary margin, laterally by the spleen, and below by the free margins of the ribs. Normally, it reveals a tympanitic note on percussion because of the underlying stomach and colon. As the pleural effusion collects and depresses the diaphragm downward, this space becomes progressively narrower, and furnishes an important sign of the presence of such fluid.

The dislocation of the viscera adjacent to the effusion, to which allusion has already been made, may be most appropriately studied by percussion, and the degree of the displacement accurately determined.

We revert now to the other question to which reference was made above,—whether or not the exudate varies in position with change in the posture of the patient. Here we meet with considerable difference of opinion. Some assert that no exudates are movable, others that all are movable, while others adopt a middle course and say that some are and others are not movable. The importance of the point is apparent when we consider that the detection of dullness varying in position with the posture of the patient is pathognomonic evidence of the presence of fluid. We may accept the dictum that large effusions are immobile. The question, however, is different with regard to moderate and small effusions. In most of these latter cases I am confident that with care in the examination, percultory evidence of a greater or less degree of movement of the fluid can be elicited after the course of a few moments following change in the posture of a patient. Pitres

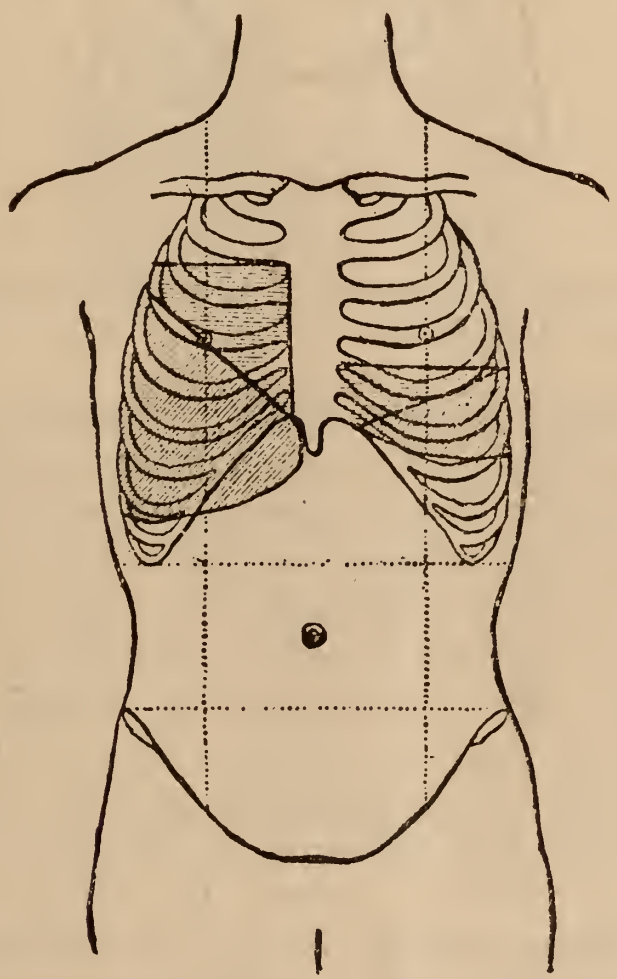

FIG. 2.

Diagram to show change in the area of dullness, with alteration of the posture of the patient in effusions of moderate amount. (After Pitres)

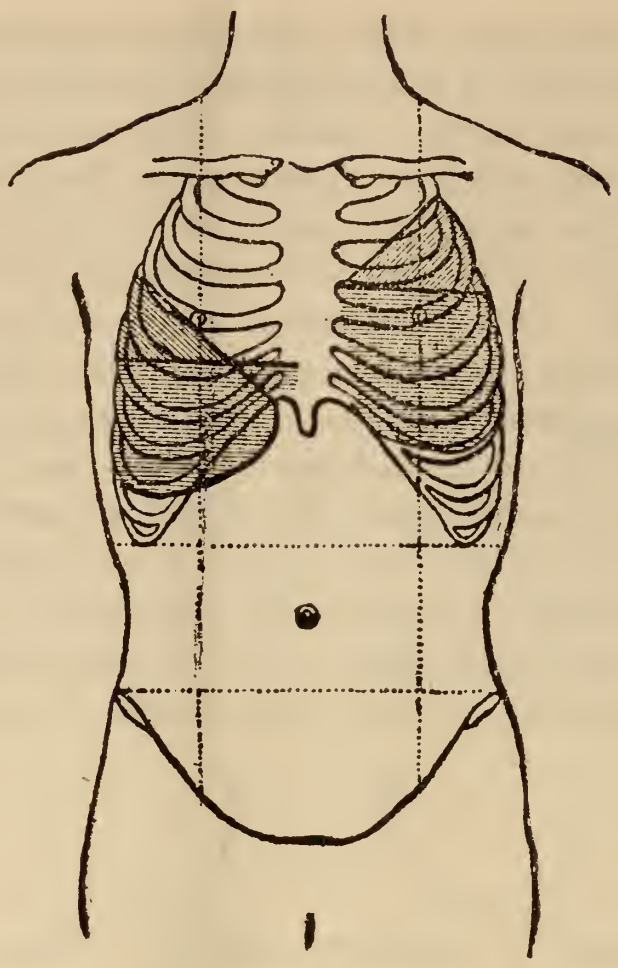

FIG. 3.

Diagram to show an occasional fall in the level of dullness in the sitting posture. (After Pitres.)

(Les signes physiques des épanchements pleuraux, *Archives cliniques de Bordeaux*, pp. 539–567, December, 1897) has recently directed considerable attention to the experimental and clinical aspect of this question, and his recommendations as to the care essential in the examination of the patient, may be very cordially endorsed. The patient to be examined should lie on his back as nearly horizontal as possible. The thorax should be carefully percussed both from above downward and from side to side, and the limits of the dullness marked with a dermographic pencil. The limits of the dullness having thus been indicated on the front of the chest, the patient should be caused to assume the sitting posture, and the limits of the dullness marked out on the posterior aspect of the chest. The front of the chest should then be again percussed, the patient still being in the sitting posture, and the limits of the dullness again marked out with the pencil. If examinations be

conducted in this fashion, variations in the limits of the dullness, and inferentially also in the height of the fluid, will be quite evident. (Figs. 2 and 3.) In a certain proportion of the cases, possibly one-quarter or one-third, the dullness will be found to present forms deviating from those described. One has been indicated, when it was mentioned that the fluid might spread itself out between an indurated lung and the thoracic wall, so that a small effusion might be thought large. Again it may be suspended in the upper part of the pleural cavity as the result of adhesions in the lower part, or its upper anterior border may be irregular or oblique, in consequence of adhesions in the upper part. (Fig. 4.)

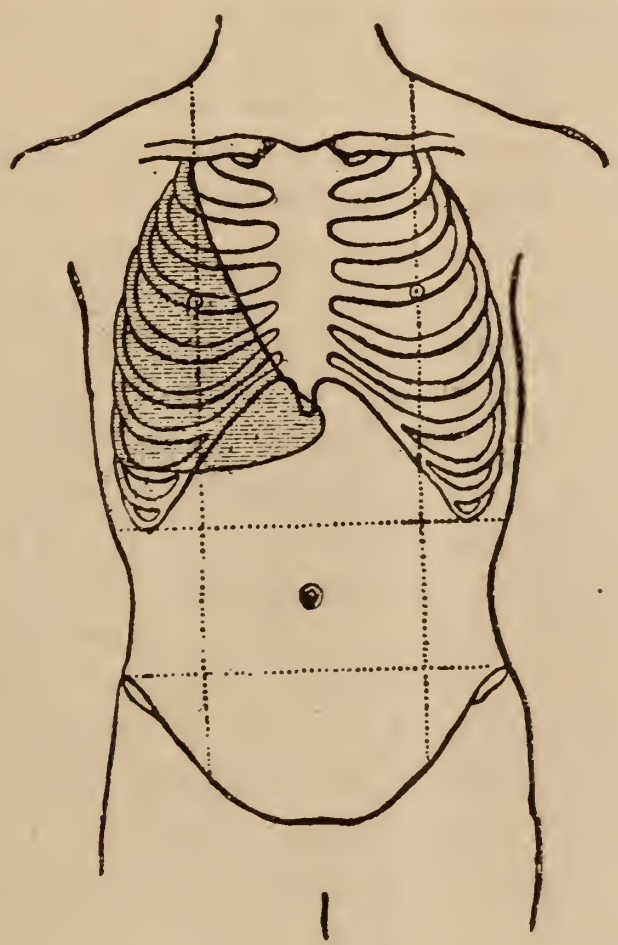

FIG. 4.

Diagram to show an unusual form of dullness in the sitting posture, determined by adhesions. (After Pitres.)

The factors which determine the position of a pleural effusion may be briefly stated as follows: In the absence of adhesions, as a result of the force of gravity, the fluid tends to seek the lowermost portion of the pleural cavity, and the position of the patient in the

formative stages of the effusion is thus not without influence. The fluid, however, is hindered in seeking the lowermost portion of the pleural cavity, firstly by the normal cohesion which exists between the opposed surfaces of the pleura; secondly and especially by the normal elasticity or tension of the lung; thirdly and to a less extent, by the normal tension of the diaphragm, the mediastinum and the chest wall.

The auscultatory phenomena of pleural effusions may be briefly stated. Over the effusion the breath sounds are either diminished in intensity or entirely absent. The degree of these depends upon the greater or less predominance of the causes which produce them: the interposition of the fluid between the auscultating ear and the lung, the greater distance of the lung from the ear, and the diminished expansion of the chest and the lung. The breath sounds, which may be audible, are commonly vesicular in character; naturally they may be interrupted or "cog-wheel." When the compression of the lung becomes excessive, bronchial breathing is to be expected. Naturally, also, under appropriate circumstances, we find all gradations from vesicular to bronchial breathing. The bronchial breathing is especially common toward the upper portion of a large effusion, or immediately above the fluid. In children, on the other hand, such breathing may be audible throughout the entire side of the thorax. If the exudate be thick, the bronchial breathing, though audible, may be diminished in intensity. Breathing with a metallic or consonating quality may also occur. The vocal resonance is commonly diminished or absent. When adhesions exist, it may be normal or increased at these places. Bronchophony is commonly present over the compressed lung, and for a short distance also over the upper part of the effusion. It is rarely appreciable over the entire effusion. Egophony—a high-pitched, bleating, plaintive quality of the spoken voice—is sometimes heard, especially at the upper part of effusions of moderate size. But this cannot be considered of very great importance, as it may be sometimes elicited over cavities or areas of consolidation of the lung. Baccelli attributed considerable diagnostic importance to the distinct transmission of the whispered voice. He considered it diagnostic of serous effusion, the idea being that it was diminished in other varieties of effusion. However, it is not always appreciable; it is heard in conditions other

than serous effusion, and even sometimes on the unaffected side. Friction sounds, present in the early stages of sero-fibrinous pleuritis, usually disappear with the advent of the effusion. Exceptionally, they may persist along the upper border of the fluid, if active inflammatory pneumonia continue. Rales are absent unless there be an associated bronchitis.

It will hardly be appropriate to discuss in detail at this time many interesting questions in connection with the differential diagnosis. Most of them will appear evident from what has already been said.

1911 Pine street.

DRAINAGE IN ABDOMINAL OPERATIONS.*

RESUMÉ OF A LECTURE.

BY E. C. DUDLEY, M.D.

Professor Gynecology Northwestern University Medical School; Gynecologist to St. Luke's Hospital, Chicago.

Two classes of cases present themselves. First, cases which up to the time of operation are free from infection: solid and cystic tumors and tubal pregnancy which have not become infected belong to this class. Second, cases in which infection has occurred previous to the operation. This class includes pelvic inflammation in its various forms and stages, such as inflammation of the Fallopian tubes and ovaries, including pelvic abscess and pyosalpinx.

Drainage of Non-infectious Cases. In this class of cases, supposed to be non-infectious, that is, not primarily infected, the sole indication for drainage is the removal of blood, serum, or such other non-infectious fluids as might otherwise accumulate in the peritoneum after a clean, adequate operation, and having little or no power for harm. Serum and liquid blood are rapidly absorbed. Coagulated blood may be absorbed, or it may become encapsulated and gradually removed by the action of leucocytes, or may become organized and remain harmless for an indefinite period. Both blood and serum are excellent culture media for microbes; hence, the necessity to keep them non-infectious by aseptic surgery. The peritoneum has great power to resist infection. It is known to

* One of the most valuable contributions yet made to the subject of peritoneal drainage is from the pen of Dr. J. G. Clark, resident gynecologist in Johns Hopkins Hospital. The author has made numerous adaptations from this paper. See *American Journal of Obstetrics*, May, 1897.

take up and dispose of large quantities of infectious material even without drainage. Recent studies and experience prove that the drain is often more potent as a medium for the introduction of sepsis than for its removal. Drainage, therefore, after a clean operation in a case not hitherto infected, is contraindicated.

Drainage of Infectious Cases.—The above designation, "infectious cases," means cases of infectious origin. Bacteriological examination of reproductive organs removed for chronic inflammatory disease show that the pus is usually sterile, or if organisms are present they are seldom active at the time.† "In forty-four specimens of ovaries and tubes, organisms resembling gonococci were found in six cover-glass preparations, but did not grow in cultures. The staphylococcus albus and aureus and streptococcus were found once in culture. With these exceptions the forty-four cases were negative. Fifty-six uteri were examined, in none of which were organisms found in culture. The gonococcus was observed once in cover-glass preparations.

"These results in general coincide with the reports of Menge, Schauta, Reymond and Magill.‡ In the examination of one hundred and forty-four cases by Schauta, streptococci and staphylococci were found four times. Menge has observed the staphylococcus once in twenty-six cases, and Morax once in thirty-three cases. Cases of pneumococcus infection have been reported by Zweifel, Frommel and Wertheim. A fatal pneumococcus peritonitis followed the infection in the cases of Frommel and Witte. Reymond and Magill believe that a salpingitis may be produced by the colon bacillus, and think that it gains entrance through adhesions or through close propinquity to the intestine. From the general review of the bacteriological conditions in these cases, we conclude that infection of the peritoneum from the diseased area at the time of operation is not likely to occur, as the initial infecting organism has disappeared."

Formerly the escape of the smallest quantity of pus into the peritoneum during an operation was considered an imperative indication for drainage. Now it follows from the foregoing paragraphs that even large quantities may escape, and being perfectly free from virulent or active microbes, do not call for drainage.

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† Miller, Clark, American Journal of Obstetrics, May, 1897.
‡ Annals of Surgery, 1896.

Comparison of a large number of drainage pus cases with an equal number of like cases not drained has been reported, and show a strong preponderance of recoveries in the non-drainage series. This preponderance is convincing proof that the drainage was at least useless. The larger mortality in the drained cases is attributable to infection introduced through the drain.

Evil Results of Drainage. In addition to the increased danger already mentioned from the direct introduction of infection through the medium of the drain, the following evil results are not infrequent:

1, Obstruction of the bowel;
2, Fecal fistulæ;
3, Vesical complications;
4, Hernia.

1. Obstruction may occur from adhesions set up by the irritating presence of the drain. An adherent intestine, sharply kinked, may suddenly become impermeable, or gradually contracting bands may slowly shut off the lumen. Most frequently the obstruction is partial, and gives rise to constipation and griping pains for days or weeks after the operation. In such cases the autopsy usually shows the intestines matted together around the drainage cavity in an unrecognizable mass.

2. Fecal fistulæ is the occasional result of necrosis from direct pressure of the drain. The irritating presence of a gauze drain may cause an inflammation so destructive as to produce necrosis and consequent fistulæ. If the bowel is opened during an operation and has been well repaired, the drain is unfavorable to union and is contraindicated. If, however, the intestinal opening is deep in the pelvis or otherwise so inaccessible as to prevent thorough suturing, if, in a word, union is improbable, the drain is indicated as a means of exit for fecal matter.

3. Vesical complications. The territory to be drained is usually in close relation with the bladder. Inflammation around the drain therefore may give rise to adhesions between the bladder and adjacent organs or may extend to the bladder. In either case vesical disturbance more or less severe may arise.

4. Hernia is very common, if not indeed the rule, in drained cases. This is because the drain separates the fascial sheaths of the recti muscles and other surfaces which otherwise would immediately unite; the small breach in the wall thus made increases,

and hernia is the result. (See vaginal drainage in a later paragraph of this article.)

To prevent infection and thereby avoid the necessity for drainage is an essential purpose of every abdominal section. The subject may be summed up in the proposition to do the operation in such a way as not to require drainage. This involves:

1. Thorough asepsis of hands, instruments and other appliances.

2. Wherever the perineum is injured or sacrificed, let the injured part, if possible, be covered by adjacent peritoneum. This may require numerous sutures and careful plastic work.

3. Control the hemorrhage if practicable even to small oozing points. This, for want of time or for other reasons, may be impracticable. It may then be safer to leave small accumulations to be taken up by the peritoneum than by the drain.

4. Avoid all unnecessary injury to the tissues. All traumatisms favor sepsis. Do the operation adequately, but with the least possible amount of operating.

If unfortunately an accumulation of pus ruptures into the peritoneal cavity, it should be removed as soon as possible by careful sponging. If the pus is sterile the sponging is sufficient. If there is reason to fear that it is septic, the peritoneal cavity should be freely irrigated with a normal salt solution, one-half of one per cent.§ Clark advocates thorough peritoneal irrigation whenever any pus comes in contact with the peritoneum. He says:

"For the past three years it has been our custom not only to irrigate the abdominal cavity thoroughly after all operations where pus or other fluids have escaped, but frequently also to leave as much as one litre of salt solution in the peritoneal cavity before closing the abdominal wound.

"It is a well-known principle in physics that a substance will undergo combustion or solution much more rapidly in a finely divided state than when it is massed together. The same principle may be applied to the disposal of foreign matter in the peritoneal cavity. In Muscatello's experiments the leucocytes could easily surround the smaller foreign bodies and carry them into the general circulation through the spaces in the diaphragm; but where they were larger many leucocytes were required for this task, and the removal of still larger particles could only be accomplished

§ American Journal of Obstetrics, 1897.

after their encapsulation and subsequent slow disintegration by the leucocytes. His experiments also demonstrated that there existed an intraperitoneal current capable of transporting the carmine bodies, even the force of gravity, from the pelvis to the diaphragm. When to these conditions we add the proved fact that the normal peritoneum can take care of a large amount of infectious matter without danger to the animal, it appears to me that there can be no question but that it is better to disintegrate and distribute infectious matter rather than to allow it to remain in a localized area."

Postural Drainage. This method advocated by Clark consists, immediately after the operation, of elevating the foot of the bed eighteen inches, and maintaining that elevation for a period of twenty-four to twenty-six hours. The object is both to prevent fluids from accumulating in pockets or limited spaces, and to distribute them by gravity throughout the peritoneum, where, from contact with broader surfaces, they are more readily taken up. The method also includes free irrigation of the peritoneum with a six-tenths of one per cent. normal solution, and the retention of a pint or more of the fluid in the abdomen. This is to wash out as much as possible of the septic fluid, and to so dilute the remainder as to deprive it of its virulence.

"This postural method of drainage is offered as a prophylactic measure against post operative peritonitis, but *not as a curative measure after the peritonitis is established.* It should, therefore, not be employed when an operation is performed for the relief of purulent peritonitis, or for inflammatory conditions associated with general peritonitis, as, for instance, some cases of appendicitis."

The General Indications and Contraindications for Drainage will appear from the foregoing paragraphs to be as follow: In a clean operation, one in which not only the pus but all the sac containing it is removed, and in which therefore no diseased surfaces are left open to secrete septic matter and keep up the supply, drainage is contraindicated. The non-septic fluids, and to a limited extent the septic fluids, will be taken up and disposed of by the peritoneum more safely than by the drain. On the other hand, when the pus-producing surfaces are left without drainage, they will continue to be a persistent source of infection, and the supply of septic matter may be greater than the peritoneum can take up; then one of two results must follow, either adhesive peritonitis is set up around

the diseased parts and the infected territory is walled off by plastic effusion, or the micro-organisms and their poisonous products are spread throughout the peritoneum, and thence poured in fatal quantities into the general circulation. Under these conditions drainage is indicated. If septic fluid becomes walled off and circumscribed, no time should be lost in opening and draining the abscess.‖

The septic indications for drainage are:

1. General septic peritonitis.

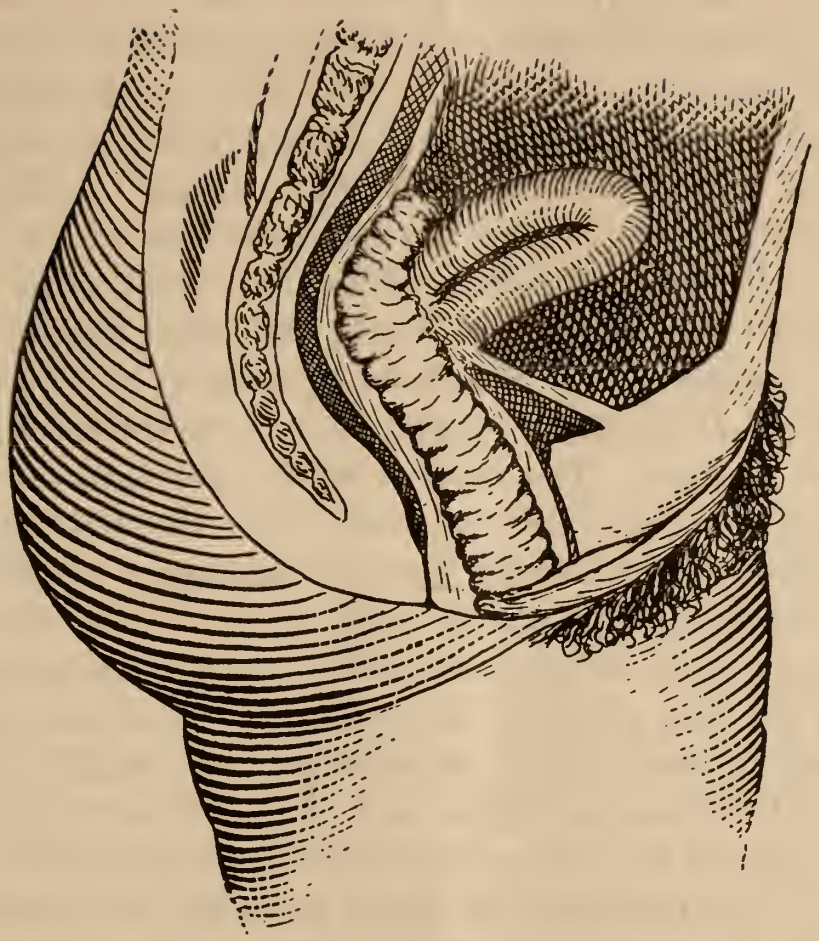
2. The presence of a nidus of infection whence septic matter must continue to be propagated. This may be an open intestine, an abscess, a cyst or an infected hematocele, or a large amount of necrotic tissue which cannot be safely removed. This condition may result, when old and extensive adhesions are present, when an abscess or an infected hematocele occurs in the pelvic cellular tissue, or when a cyst is so firmly adherent and necrotic that it cannot with safety be entirely removed. In these conditions the drain gives an outlet for the septic fluid and the broken down necrosed tissue.

3. Hemorrhage which cannot be controlled by suture, ligature, temporary pressure or hot sponges. (See capillary gauze drainage in succeeding paragraphs.)

Tubal Drainage is usually through soft rubber or small glass tubes. For drainage through the vagina rubber is preferable to glass. The drainage tube is especially useful as a medium for drainage and washing out septic cavities, such as abscesses which have been walled off from the general peritoneum. The presence, however, of a tube in the peritoneal cavity usually causes, in a few hours, the surrounding organs to be fused together. The space which the tube occupied is then isolated from the remainder of the peritoneum, and is the only space which it can possibly drain. For this reason tubular drainage in the abdomen has been largely discarded.

Capillary Drainage, by means of a continuous strip of gauze, has been extensively used for peritoneal drainage, both through the abdominal and vaginal wound. It is applicable to the second and third indications for drainage, as stated in the foregoing paragraphs.

‖ Adaptation from Watkins. American Gynec. and Obstet. Journal, March, 1896.



Vaginal gauze drain extending from Douglas' pouch to the vulva.
(After Watkins.)

There are two principal indications for the use of gauze packing: 1, hemorrhage which cannot be practically controlled in any other way without unduly prolonging the operation. The gauze packing then used is immediately a compress, but if left longer than is necessary for this purpose, becomes a capillary drain. 2, pelvic gauze packing is indicated when it is desirable to quarantine the field of operation from the rest of the abdominal cavity. The rapidity with which adhesions form around the packing is well known. In a few hours the septic area is shut off from the general peritoneum by the adhesions, and in that way the septic influence is centralized and mostly confined within narrow limits.

The above use of the gauze should not be confounded with its use as a drain. The value of gauze for drainage, as usually understood—that is, for the removal of any fluid which may form in the peritoneal cavity—is probably overestimated. The peritoneum has often demonstrated its ability to take care of large quantities of

secretion. If, as many claim, it be true that the presence of a certain drain excites the secretion of large quantities of fluid which would not otherwise be secreted at all, it would follow that the drain is not often so necessary as the large quantities of fluid which it carries off would indicate. Clearly it would be absurd to use a drain for the purpose of carrying off secretions which it had itself procured. However, the gauze drain, so called, often acts as an obstruction to the removal of fluids, and may, therefore, have to be used in conjunction with tubular drainage.

Abdominal Drainage, if employed, may be either by the tubular or capillary method. The route from the pelvis to the abdominal wound is long and in close relations with the bladder, intestines and omentum, which should have no necessary relation with the fields of operation, but which, from contact with the drain, are unfortunately liable to infection, adhesions, perforation and hernia. Moreover, the long sinus left after the removal of the drain is often slow to heal, its outer end is prone to contract rapidly, and leave in the pelvis a troublesome, undrained, or imperfectly drained pocket. For these reasons the abdominal route is objectionable.

Should it be necessary to drain through the abdomen, small glass tubes or gauze may be used. The former should be long enough to reach to the bottom of the pelvis, and is kept from slipping into the abdomen by a flange at the outer end. This form and route of drainage is useful in operations for peritonitis and for the removal of serous effusions. The wound is dressed by packing gauze over it and around the protruding portion of the tube. A perforated thin sheet of rubber dam is snapped over the flange, a mass of absorbent cotton is placed over the end of the tube and enveloped in the rubber dam. The cotton absorbs all the drainage fluid. It should be renewed often enough to keep it dry. The rubber dam confines the drainage fluid to the cotton, and thereby protects the dressings proper from moisture. The proper time for the removal of a drain is when it ceases to drain, or when little fluid comes through it. In draining for non-suppurative cases, the first fluid is usually a dark, bloody serum. When this diminishes in quantity, and becomes light-colored or colorless, the drain should be removed. A glass drain should be turned around twice daily. This is to prevent parts of the omentum from working their way into the small holes at the inner end of the tube. Such an accident

may give great trouble in the final removal of the tube. On this account it is better to use tubes with only large openings at the ends.

Vaginal Drainage. The route from the pelvic cavity to the vagina is short and direct; hence, the vaginal route is generally preferable. If in the operation an opening in the pelvic cavity and the vagina has not been made, and drainage is necessary, it is often better to make the opening for that purpose. The great advantages of the vaginal route are: 1, minimum risk of hernia; 2, natural and dependent drainage; 3, as shown by experience, more satisfactory convalescence. The safety of this route depends upon the thorough disinfection of the vagina.

The introduction of a gauze drain, whether abdominal or vaginal, is as follows: The end of a continuous strip of double gauze, with the edges turned in and stitched together to prevent fraying, is doubled backward and forward upon itself like the folds of a fan, from the part to be drained to the surface. Over this an external dressing is placed, and changed as often as it becomes saturated. The figure shows a vaginal drain in place. The abdominal gauze drain is placed in a similar manner.

The time for the removal of a gauze packing varies with its purpose. If used to control hemorrhage, it may be removed in twenty-four hours; if the indication is drainage, it may be left for five days unless, as occasionally happens, it acts as an impediment to drainage. The writer has repeatedly observed patients to show signs of septic absorption on the second or third day, when the removal of the gauze was followed by a gush of pent-up fluid and prompt relief of all urgent symptoms. It is not usually necessary after the removal of the original drain to introduce fresh gauze. If at any time the opening tends to contract too rapidly, or drainage becomes imperfect, the gauze may be renewed, or a tube may be inserted.

The classical dictum was, "When in doubt, drain." If, however, the irritating influence of the drain is to cause the secretion of fluid, which otherwise should not be secreted; if the peritoneum left to itself is capable of taking up and disposing of large quantities of fluid, even to some extent of septic fluid; if the drain is more prone to introduce, than to carry out sepsis, the dictum may have to be reversed—

"WHEN IN DOUBT, DON'T DRAIN."

1617 Indiana ave.

EIGHTH ANNUAL REPORT OF THE SECRETARY OF THE TENNESSEE STATE BOARD OF MEDICAL EXAMINERS.

BY T. J. HAPPEL, M.D., SECRETARY,
TRENTON, TENN.

GENTLEMEN—This year marks the beginning of a new order of things, the passage of the amendments by the last Legislature causing us to pass upon the fitness of every applicant to practice medicine in this State, the possession of a diploma no longer conferring upon its holder the right to administer to the relief of the sick, but only serving to show that he has attended medical lectures for a stated term of years, and has had opportunities to see diseases in their varied forms in the different clinics of a medical school. For the passage of these amendments the Board is especially under obligations to Dr. Halbert, who labored diligently in season and out of season in their behalf.

The Board will be confronted, too, with the question whether or no the applicant's English education is sufficient to enable him to comprehend the subject of medicine. The applicant's answers as written and delivered to us will be the basis upon which his knowledge of orthography, syntax and prosody, as well as his knowledge of medicine, must be estimated.

At the special meeting of the Board of Examiners, held in Nashville, May, 1897, the following resolutions were adopted to guide the Secretary in issuing certificates, and the Board as a whole in granting temporary licenses in the time intervening between that date and the next regular meeting of the Board :

Resolved, 1. That hereafter no temporary license is to be issued to parties who apply to practice medicine in this State, except upon a written examination.

2. That the Secretary issue certificates to all parties holding temporary license, granted prior to February 27, 1897, where such certificates had been ordered by the Board.

3. That the Secretary collect a fee of $5 for certificates, where the parties had been notified to send in license, and had failed or refused to do so prior to April 29, 1897.

4. That the Board will issue certificates to parties holding temporary license granted on diplomas, from February 27, 1897, up to April 29, 1897, provided they are entitled to the same, without examination.

5. That no temporary license issued since April 29, 1897, shall entitle the holder to a certificate, but that all parties who desire to practice in this State shall appear before the Board at a regular meeting for examination.

6. That the Secretary, in connection with the President, prepare proper blanks, numbering same, for application for examination, gathering all necessary information from applicants; that these numbered applications be signed by applicant with his full name; that each applicant enclose his application in a sealed envelope provided for the purpose, numbered on the back, and deliver the same to the Secretary before proceeding with his examination; that he sign his examination paper with simply the number on his application blank, and that papers be passed upon before any envelopes be opened, the envelopes being endorsed with the result of the examination before they are opened by the Board.

What modifications or changes should be made in these rules to fit them for future use remains to be seen. Of course the resolution instructing the Secretary to issue certificates to parties holding temporary licenses issued prior to the passage of the amendments, April 28, 1897, should remain in full force and effect, but under no circumstances now should the fee for a certificate be less than the amount fixed by the act, viz., $5.

The question of granting a *temporary license without examination* needs careful consideration. One of the greatest evils arising under any medical law is that of a *temporary* license, granted without every safeguard thrown around it that accompanies the granting of a certificate. In many cases, parties who have received these temporary licenses have had them registered and have launched out into regular practice, and have paid no attention to the fact that the permit recites on its face that it is good only until the next meeting of the Board of Examiners. These names once entered on the books of the county court clerk are never stricken off. Thus they soon come to be considered as legally registered practitioners of medicine, and when the county court clerk or the party is notified that he is not, much surprise is manifested, especially by the doctor.

There might be exceptional cases in which the diploma should be stamped and the party permitted to proceed with his work at his own risk until the meeting of the Board, but without an examination no license should be issued. The salutary effects of the amendments to our law have been plainly shown in the city of Nashville, where many adventurers, armed with diplomas obtained

in divers ways, flocked to the Centennial for the purpose of plying their nefarious business of robbing the people in ways that are dark and by tricks that are vain. But when these parties found that a diploma was no longer an *open sesame*, they folded their tents and quietly shook the dust of the city off, generally between the setting and the rising of the sun, and sought more genial climes.

The requirement of the amendment providing that the county court clerks shall report semi-annually all registrations in their respective counties, has not been responded to as I had hoped. Only three counties, Knox, Blount and Sullivan, have reported. These counties sent copies of their entire registration, for which I paid the respective amounts set forth in my financial exhibits, though I felt that the intention of the law was that it should apply to future registrations and reports. I submit this matter to you and ask your instructions for future guidance. To construe otherwise would be to make a retroactive law. I felt that the money spent in these reports was well invested, as it enabled me to untangle several irregular registrations, which will eventually return to the Board the money so spent.

The list of the legally registered physicians in the State prepared by me, and printed originally in the Health Bulletin, and afterward reprinted in pamphlet form, has brought about much correspondence, and has revealed the fact that there are still many physicians practicing in this State who are not legally registered.

If the list of the legal practitioners were published in one or more newspapers of the county, together with the Supreme Court's opinion in the case of the State vs. Haworth, 7 Pickle, showing that none but legally registered physicians could collect their accounts by law, it would create proportionately as great a stir as did the publication of the Davidson county list in the papers of Nashville some months ago. The opinion of the court is as follows:

SUPREME COURT OPINION, 7TH PICKLE, PAGE 18.

This was a case in which a woman physician, Miss Haworth, sued for a fee, and defense claimed that she was not a licensed physician within the meaning of the statute, and demurred to the payment. The court below had rendered judgment for the defendant, whereupon the plaintiff appealed.

In delivering the opinion to the court, Judge Lurton said:

"Plaintiff, in her evidence, states that on February 25, 1891, she did register herself before the county court clerk and obtain his certificate. This was after the ser-

vices rendered to defendant, and this cannot help plaintiff's case, for at the time she attended defendant she was prohibited from practicing, and her subsequent registration and compliance with the law can have no retrospective effect. Plaintiff says that prior to this compliance with the law she had obtained what she calls a 'temporary license,' but cannot say she had this temporary license at the time she attended defendant. She admits that this temporary license was never recorded as required by section 9 of act of 1889. This section requires that every person holding a certificate from the State Board of Medical Examiners, or the county court clerk, shall have it recorded in the office of the county court clerk in which he resides, and the date of record shall be endorsed thereon. Until such record is made, the holder of such certificate shall not exercise any of the rights or privileges therein conferred to practice medicine. In view, therefore, of the plain provision of this section, it cannot matter what the character of her temporary license was, inasmuch as it was not recorded. The contract sued upon was one expressly prohibited by the statute. Where a statute has for its manifest purpose the promotion of some object of public policy, and prohibits the carrying on of a profession, occupation, trade or business, except in compliance with the statute, a contract made in violation of such statute cannot be enforced. This is familiar law, and the judgment must be affirmed."

In regard to a legal registration, it would be well to call attention to the opinion of the Attorney-General of the State in regard to the status of some who have registered their diploma with the clerk of the county court since December 4, 1889, and prior to the extension of the act to July 1, 1891, and others who have registered with the clerk *since* that time.

This opinion is as follows:

KNOXVILLE, TENN., Aug. 31, 1894.

T. J. Happel, M.D., Secretary State Board of Medical Examiners, Trenton, Tenn.

DEAR SIR—Replying to yours of the 25th inst. hereto attached:

1. A party is not legally registered who, being in the practice of medicine or surgery at a date of the passage of the act of 1889, chapter 178, failed, as required by the second section of that act, to obtain certificate within six months from the date of its passage, but obtained certificate after the expiration of the six months and before the passage of the extension act of 1891. Such registration and certificate are wholly unauthorized and void.

2. Parties engaged in the practice of medicine or surgery at the date of the passage of the act of 1889, chapter 178, who failed to make proof before the clerk and obtain certificate during the six months allowed by the act of 1889, or during the extension to July 1, 1891, made by chapter 109, acts of 1891, are not entitled to certificate under section 2 of the acts of 1889, as amended by section 1 of said act of 1891. They have forfeited all claim to the benefit of these provisions by their failure to avail themselves thereof within the prescribed time.

Very truly yours,

G. W. PICKLE, Attorney-General.

I have found lately several cases where physicians had registered with the clerks, and had been told that they had done all that was

necessary. One case involved a temporary license, another a registration of a diploma of 1893, and another a registration in 1891. In each case the party had been assured, and believed that he had complied fully with the registration acts, but when furnished with a report containing the opinion of the Attorney-General of the State in regard to the matter, he found that he was not, and in every case applied for legal registration papers. Where every fact was established beyond cavil, I issued certificates, but when not fully satisfied, a temporary license was granted.

In Morgan county I had J. M. Davis, an attorney of that county, to prosecute one J. P. Morgan for practicing without license. He was promptly arrested and fined, but up to this time the fines have not been collected and paid over to me.

The last certificate issued from my office bears date of February 15, 1898. The large majority of the certificates were mailed more promptly than usual, and with less quibbling this year in regard to the temporary license fee.

My seventh annual report was gotten out by the printers much more promptly than usual, having been printed in the May number of the *Nashville Journal of Medicine and Surgery*, and reprinted therefrom. Copies of it have been furnished to the different members of the Board, and have been distributed largely elsewhere. In addition to getting out this report, I wrote, had published, and after supplying the members of the Board with copies, distributed freely a pamphlet entitled "Medical Legislation," containing a condensed report of the work of the Board from the date of the appointment to the present time. I have also compiled, under the orders of the Board, the medical law as amended, together with the by-laws, rules of order, etc., in an eighteen page pamphlet, and in addition to all this I have gotten up in pamphlet form a list of the medical colleges, and a register of the physicians of the State, containing the names of more than 4000 physicians, the colleges from which they graduated, and the county and town in which they lived.

These four pamphlets, making nearly one hundred pages of printed matter, have consumed every spare moment of my time, not to mention the ordinary work of the Board which devolved on me as Secretary. It can be seen at a glance at the heap of letters, that the correspondence has been twice as heavy as usual. Every

State Examining Board has been supplied with a copy of our law and other papers. In many cases, reports have been received from them in return. I am now making an effort to enlist the county court clerks in the various counties in an effort to revise the list of registered physicians in the State. I have mailed to each of them one of my printed lists of the physicians in the State, and have called his attention to the list of his own county, asking him to revise it, and report any errors or omissions. Many of them are taking hold slowly, and some reluctantly. It is to be hoped that when they find that there is provided in the law some conpensation for services rendered, they may be more prompt.

Efforts have been made in many counties to prosecute offenders against the law, but in most cases those who were practicing in defiance of the law either left or took steps to register. In some cases the services of an attorney have been hard to secure, and it has been still more difficult to enlist the local profession in the enforcement of the law. Many are ready and willing to report offenders upon condition that their names are not used. This puts us at a great disadvantage in enforcing the law where so large a territory is involved.

I regret to report that many are still practicing without regard to the law. The Board should take decided steps as soon as possible to stop all such evasions, disregards and defiances of the law. If the law is to apply to one, it should be made to apply equally to all. Where medical societies exist, it is usually easy to reach such cases, but otherwise it is not. This matter needs careful thought upon the part of each member of the Board.

During the year that has just passed, certificates have been issued to 112 graduates, of whom 103 were regulars, 7 homeopaths, and 2 eclectics. In addition to the graduates who have received certificates, three certificates were issued to non-graduates, as ordered at our last meeting as a result of examinations held.

I would report to the Board that in accordance with the resolutions adopted at the regular meeting of the Board authorizing the President to appoint a delegate to the National Confederation of State Examining and Licensing Boards, I was requested and appointed by the President to attend said meeting of said Confederation in Philadelphia in June last.

Much time in the meeting was devoted to the discussion of the question of minimum requirements for entrance upon the study of medicine, and the possibility of arriving at some agreement by which a license issued in one State could be made to enable the holder thereof to practice in any other without any further steps than that of registering the certificate which he already held. No definite conclusions were reached in either case, but it could readily be seen that, with the wide difference in the existing requirements in the different States, it would be impossible for the present to arrange for such certificates. No States requiring examinations regardless of diplomas, would accept a certificate based upon the possession of a diploma. The discussion developed the further fact that the trend of all future legislation would be to ignore the possession of a diploma as an evidence of fitness to practice medicine. The report of the proceedings of this meeting has no doubt been received in pamphlet form by each member of this Board, as the membership fee of $10, which is required of each State on becoming a member of the Confederation, is intended, among other things, to furnish a copy of this report to each member of each Board holding membership therein. In this report you can find the part which was taken by your representative, and the position assumed by him upon matters discussed by the Confederation. About the 15th of November last, I received a notification of my appointment by the President of the Confederation as a member of the committee on "Minimum Standards."

Dr. W. L. McCreary, whose term of office as a member of the Board expired in June, 1897, was re-appointed to serve for another term of six years.

The term of Dr. Hunter will expire in June, 1898. The three years period for which your present officers were elected ends with this meeting. The Board must reorganize before adjournment.

Meyer's Symptom of Scarlet Fever consists of a slight paralysis of the upper extremities, or frequently only numbness of the hands, or pricking sensation on the palmar aspect of the hand or ends of one or more fingers. This lasts a variable length of time, but rarely appears before the eruption. The symptom is absent in other eruptive diseases, and in drug erythema.

A CASE OF RECURRENT VULVAR GROWTH OF OBSCURE ETIOLOGY.

BY J. M. BALDY, M.D., AND WILLIAM H. WELLS, M.D.
PHILADELPHIA, PA.

In May, 1894, I was called to see Mrs. McD., who was in the sixth month of her ninth pregnancy. She had sent for me on account of intense burning pain in the vagina, around the vulva, and extending backward over the perineum toward the anus. This pain was so great as to prevent sleep, and the woman was unable to walk or sit for any length of time because of it. She ascribed the discomfort to hemorrhoids. Some constipation existed; there was no bleeding from the rectum, nor was there any vaginal discharge. On examination, the cervix was that of a multipara; somes light laceration, no particular hardening such as might point to malignant disease. There was an old laceration of the perineum of slight degree. On examining the vulva, I found an ulcer on the left lesser labium, extending forward over the inner surface of the greater labium and backward slightly into the vagina. This ulcer was in shape considerably like the area of denudation in the old-fashioned Emmet operation for laceration of perineum. It extended down through the epidermis, and was surrounded by a border of what seemed to be hypertrophied epidermal tissue. The floor of the ulcer was covered by granulation, over which there was considerable secretion. In color the ulcerated surface was reddish, not so dark as a specific ulcer, the margins being somewhat the color of boiled ham. Further back toward the vaginal opening a second and smaller ulcer existed. The walls of this were thicker, and the area of granulation much smaller. On the right lesser labium, on its inner side, there were three or four similar ulcers, all of the same light-reddish color.

The patient gave a good family history; there was no tuberculosis, and her lungs were in good condition, but she was decidedly anemic. She stated that the disease began at the site of the largest patch, it beginning as a small papule, which gave great pain. This papule finally broke down, leaving a small ulcerating surface which

spread rapidly. The recent characteristic peculiarities of the ulcer were the intense pain and the rapidity with which it spread. In a short time the largest one on the left side united with the smaller one above it, and the combined ulcer then spread forward and downward until the perineum began to be attacked. Each new ulcer began in the same manner—a puffy swelling of the epidermis, this later breaking in the center, leaving a round ulcer which united with the one preceding it. There was no tendency to form circles as in herpes zoster.

On account of the patient's pregnancy, I was afraid to remove the growths at once. I do not think, on this account, that an operation would have been advisable. After having obtained a consultation with Dr. E. E. Montgomery and on his advice, the ulcers were dressed daily with equal parts of iodoform and dried alum, cocaine being first used to lessen the pain. In August the woman was delivered of a large male child. Extraordinary care was taken to prevent sepsis, and she went through the puerperal period with no abnormal temperature. The treatment of iodoform and dried alum seemed to act beneficially, as the ulcers, whether from this treatment or the cessation of the pregnancy, shrank considerably, and lost a good deal of their tendency to rapid growth. In October, 1894, the ulcers had shrunk considerably, but the growth was extending slowly backward across the perineum, and very nearly encircling the anus. At this time the patient desired the removal of the growth, and as she persistently refused to go to a hospital, or to have them excised, they were removed with a Paquelin cautery. The operation was thoroughly performed, excepting at that part where the ulceration passed into the rectum. It extended up to the internal sphincter, and I feared to destroy this muscle. Owing to there being no excision, no microscopic examination was possible.

The use of the cautery produced instant relief, which continued for several months, until the growth around the anus began to spread again. The patient was lost sight of the latter part of 1895 and was not heard from again until she came into Dr. Baldy's care, whose notes on the further conditions are appended:

Dear Dr. Wells—Early in March, 1897, Mrs. McD. came to me complaining of an ulceration on the privates, accompanied with great pain and discharge. She informed me that she had had the

Dr. Baldy's case of Recurrent Vulvar Growth, showing old scars on perineum and labium, also new area of disease.

same trouble a year or two before, and had been treated by yourself and Dr. Montgomery; that the trouble had disappeared, but had, after some months, again returned. I found her to be a woman of 43 years of age, and that she had borne nine children. She menstruated regularly, and had no pain at that time. There was continued leucorrhœa, evidently from an old metritis and endometritis. She complained of the presence of an open sore, which bled and discharged a watery discharge, excruciating and continued pain at the seat of the trouble, backache, loss of flesh and strength. The trouble began as a small pimple, which broke down and gradually spread. Examination revealed a growth raised $\frac{1}{8}$ of an inch from the skin, papillomatous in character, with small ulcers in places, extending from the fourchette and lower third of the labium major over the perineum toward the anus as far as the edge of the internal sphincter, about $2\frac{1}{2}$ inches long by $1\frac{1}{4}$ inches broad. The principal feature of the symptomatology was the continued, steady and excruciating pain. I made a diagnosis of malignancy, and excised the whole area of the disease. As much of the wound as possible was brought together by silkwormgut sutures; the balance healed by granulation. The healing was complete. The operation was performed March 5, 1897. Three days ago I again saw Mrs. McD. and find the condition much similar to the original one, only smaller in extent and at a point to the side of the old site, and not involving it. The photograph shows the old scars on the perineum and lower part of the labium major very plainly, as it does also the new area of disease to the side and lower down. I should, by all means, advise another excision before there is any chance for further increase in the involved area.

At the time of the operation, the specimen was placed in the hands of Dr. Beyea for examination. I have asked him to send me a copy of his report, which is here appended:

"DEAR DR. BALDY—I send you a report on the specimen of tissue from the case of Mrs. McD. When I made this examination it showed nothing microscopically which would characterize it from an ordinary inflammatory process. The specimen was an irregularly oblong portion of tissue removed from the skin portion of the perineum, measuring 2.5 cm. in length and 1.5 cm. in breadth. Its macroscopical appearance was that of a hyperplasia of the skin somewhat resembling that of an early carcinoma of this region. The skin surface showed a small amount of ulceration but no distinct destruction of tissue.

"Microscopical sections were made through every portion of the tissue and showed

the following changes: The epidermis is distinctly thickened with a marked extension of the papillary portion into the underlying tissue. The prolonged portion of papilla are surrounded by a very extensive small, round-cell infiltration. In the deeper tissue this small, round-cell infiltration gradually disappears and becomes more localized, being most and only pronounced around blood vessels. The blood vessels are distinctly dilated, and the endothelial cells are swollen. The lymph spaces are dilated, and their endothelium swollen and changed. Macroscopically and microscopically the disease shows nothing that will differentiate it from simple chronic inflammatory hyperplasia, except that the small, round-cell infiltration is most extensive about the blood vessels. There is not the slightest change that would lead to the belief that the disease is one of beginning malignancy. It is certainly not carcinoma. There are no giant cells, or epithelial infiltration, or miliary tubercles which would allow one to conclude the possibility of a tuberculosis. The disease shows the characteristics that have been described by Veit as ulcers rodens vulvæ, a name that Virchow has given to these atypical ulcers, the etiology of which cannot be determined. He does not include in this those cases of ulcers rodens which are now understood to be a form of epithelioma. Tubercle bacilli were not stained for in this case, as the appearance of the tissue did not at the time of the examination seem to me sufficient to warrant such an extensive task.

Very truly yours, H. D. Beyea."

My diagnosis at the time of the operation was malignancy, and in spite of the above report I am unwilling to discard that opinion. The plain, cold facts remain, that the character of the suffering this woman was afflicted with does not accompany simple or rodent or tubercular ulcerations, and does accompany malignancy most commonly. She had continual, persistent and severe pain in the parts, so much so that she vigorously protested against a delay of several days in her operation.

I had, within one month of the time I did this operation, another patient with a similar ulceration, and whose history is much more conclusive to me. She was 34 years of age, and had one child seventeen years before. Since the birth of the child she had been irregular and profuse in her menstruation. Four years before I saw her she had the uterus removed by the vagina for cancer. Eighteen months before her visit to me she had a small wart appear on the labium, which gradually spread. At the time of her visit to me she had a large ulcerated surface extending from the fourchette on the left side of the labium major almost to the top. The labium was greatly swollen and edematous. The pain in this case was so intense that sleep had been a rare thing for months. As she has put it since, if it had continued she "would have lost her mind." In all respects the symptoms, appearance and progress was as in the case of Mrs. McD. The woman fairly begged for an

operation and relief, so intense and continual was her suffering. The microscopic examination gave the same result as in the case of Mrs. McD.—nothing.

I have seen this woman also in the past four days, and she is free from any return, and the relief is complete. The operation was performed one year ago this month. I can find a history both of tuberculosis and cancer in her family. Her mother "had scrofula badly"—her neck was all scarred by suppurating glands. She herself had a cancerous uterus removed four years before I saw the ulceration.

To me, from a clinical standpoint, both these cases were malignant; pathologically, they are so indefinite that the examination does not shake by clinical diagnosis. I should most certainly thoroughly excise the new growth in the case of Mrs. McD.

Very truly yours, J. M. Baldy.

1722 Chestnut street.

NASAL HEMORRHAGE AND THE HÆMOPHILIC DIATHESIS.

BY M. A. GOLDSTEIN, M.D.

ST. LOUIS.

Professor of Otology, Beaumont Hospital Medical College; Consulting Aurist to the Alexian Brothers' Hospital, and to the Sisters of St. Joseph School for the Deaf.

In the practice of every rhinologist nasal hemorrhage is a frequent experience, and under ordinary circumstances need never occasion any complications or serious difficulties. In consideration of the etiology of hemorrhage from the nose two main factors are called into question, viz.: 1, traumatic, and 2, iodiopathic.

Under the subdivision traumatic we may include that class of cases which are the result of injury, and also that equally large group of cases where hemorrhage is produced as the result of various intra-nasal operations. To the experienced operator this form of nasal hemorrhage rarely requires extraordinary precautions for its arrest.

The main inconvenience to be encountered is the obscuring of the field of operation. By the judicious use of cocaine, the galvano-cautery applied to the bleeding point of an injured septal artery, or the application of the hot vaseline spray in the nasal cav-

ity, these ordinary forms of hemorrhage may be promptly arrested. Where extensive operative interference has been made, the substantial plugging of the nasal cavity with gauze or cotton tampons, preferably those soaked in some oily solution to prevent the blood saturating the tampon, is usually sufficient to control the bleeding. Where such measures are not successful, the use of various chemical astringents and styptics are called into question. Of these, my preference has always been for the fluid extract of geranium, saturated aqueous solution of picric acid, Monsell's solution, and the peroxide of hydrogen. These are usually introduced by saturating pledgets of cotton with the desired solution. One objection which is offered to the use of the iron salts, and which applies equally to the extract of geranium, is the mess it makes in the involved bleeding area. The cotton pledget, owing to the properties of coagulation possessed by these medications, becomes covered with blood clots, and thus, in a cavity where asepsis is often maintained with difficulty, is not desirable.

In the majority of operations about the nose, where hemorrhage has not been held in check by the previous application of cocaine, I have found most excellent results in the use of Marchand's concentrated preparation of peroxide of hydrogen, known as hydrozone. I use this preparation in full strength, first spraying the bleeding area profusely, and then inserting a cotton tampon saturated with the same remedy into the nasal cavity. This procedure is painless, and the preparation is tasteless to the patient, and when the cotton plug is removed there are none of the numerous blood clots which accompany the application of astringent tampons. In addition to this the powerful bactericide action of hydrozone should give it the preference over the various astringent solutions which lack this property.

In the consideration of the idiopathic form of nasal hemorrhage, we are confronted by a somewhat more difficult problem. It is not my purpose in this paper to dwell at length on the etiology of the various conditions of nasal hemorrhage of idiopathic origin, but rather to make a few practical suggestions gleaned from the treatment of a case which recently came under my observation.

The patient was referred to me about two weeks ago with the following history:

J. O., male, age 41, married, father of several children; by occupation a deputy sheriff. The first statement made by the patient was, "Doctor, I am a bleeder, and came from a family of bleeders. My father was a bleeder, and my young son, twelve years of age, bled profusely for hours, several months ago, after extraction of a tooth."

Further inquiry elicited the fact that about seven years ago the patient was suddenly taken with a severe hemorrhage from the nose, and all endeavors to check the bleeding were unsuccessful. The bleeding, of an oozing character, continued for two days and three nights, finally placing the patient in a state of collapse and almost exsanguination. About three years ago the patient was shot in the right thigh, and the bleeding was finally arrested by long and continued application of pressure.

Five weeks ago, without any previous warning, an oozing hemorrhage from the nose began. By constant plugging of the cavity the bleeding was arrested from time to time. The patient states, however, that the tampons which were used were always saturated, but it was simply the mechanical pressure of the tampons which partially checked the bleeding. The bleeding had continued since that time with short intermissions of about four to five days, when he applied to me for an examination of the nasal cavities.

On inspection I found that the bleeding nasal cavity had been tightly plugged with a prepared medicated moss of light yellow color and silken texture. This material was saturated with blood, partially dried, but showing no clots or coagula. I proceeded to remove this mass very carefully, piece by piece, with the forceps. It came away in shreds. Before this had been completed a mild oozing of blood ensued. The work of removing this prepared moss was hastened and the nose thoroughly cleared. By this time the bleeding had become more profuse, and it was difficult to determine where the site of the hemorrhage was, other than that it proceeded from the septal side.

For the purpose of quickly clearing the bleeding area I use toothpick mops, prepared by wrapping one end of the toothpick with cotton. Taking up a handful of these cotton mops they are carried, one by one, by gentle pressure to the bleeding surface until the area is temporarily dried, and the point of bleeding can then be easily determined. After several attempts in this manner, I succeeded in locating the bleeding point in the small depression in the anterior portion of the septum just posterior to the columnæ. No lesion or ulceration was visible, the surface presented a slightly roughened appearance, and while the blood appeared to be of an oozing character, the pulsation of a small artery was soon determined.

The therapeutic measures to be adopted in nasal hemorrhage now come into consideration. The various forms of chemical astringents and styptics were tried in vain. I used peroxide of hydrogen, fluid extract of geranium, tinc. ferri chlori., ten per cent. solution of cocaine, and gallic acid, without the usual success. In addition to the application of these chemicals, I also applied tri-chlor-acetic acid and the chromic acid bead, but this did not produce the favorable chemical cautery effect which these admirable remedies usually have. I also made use of the thermic reaction of hot vaseline, sprayed copiously into the nose, but without avail. As a final resort I applied the galvano-cautery to the bleeding point, using a bulbous-pointed cautery electrode for this purpose. It required at least six applications to the bleeding area to check the flow.

To communicate the difficulties presented in treating this particular case, it is necessary to add that the slightest pressure or the manipulation of an instrument started the bleeding at another point. The patient incidentally informed me that a mere scratch or abrasion of the skin would cause bleeding for hours, and that he was

unable to brush his teeth, as a copious and continued bleeding from the gums always ensued.

After the application of the galvano-cautery and the searing of the bleeding surface, I thought my work was successfully accomplished and proceeded to gently dress the nose preparatory to the patient's departure. On introducing a pledget of cotton saturated with liquid mentholated vaseline, the bleeding began afresh.

At the second attempt with the galvano-cautery to arrest this new hemorrhage, the results were not quite as satisfactory. In spite of every precaution in manipulation, the bleeding continued. The galvano-cautery was now used with great care, as it was feared that too deep a cauterization would perforate the septum. After perhaps three hours work on my patient, the bleeding was arrested and a very light cotton plug inserted into the nose.

Four days later I saw the patient for the second time. A free discharge of watery, foul-smelling purulent mucus had been set up. The odor was similar to an especially marked ozena. Inspection of the nose revealed a series of crusts and scabs covering the area of cauterization, which were now undergoing softening and were quite purulent. The question arose whether to remove this purulent mass, which by continued suppuration threatened a large perforation of the septal cartilage. If, on the other hand, this tissue was removed, a renewal of the bleeding was sure to follow.

After some deliberation I decided to clear the nose of these suppurating crusts, which were beginning to make inroads on the cartilaginous septum. This was easily accomplished by one stroke of the curette. As anticipated, the bleeding began even more copiously than on the previous occasion, and I found it necessary to carry out a series of therapeutic measures similar to those tried before. After the bleeding had continued some three or four hours, my esteemed confrere, Dr. J. C. Mulhall, saw the case with me.

In addition to the remedies which had already been used, we made an active application of the chromic acid cautery, but with little effect. During these manipulations the patient had received two drachms of fluid extract of ergot per os. Our final therapy consisted in applying Monsell's powder to the bleeding surface. Apparently this, together with the internal administration of ergot, gradually arrested the hemorrhage, after six hours of constant attendance on the patient.

All plugging of the nasal cavities, either anteriorly or posteriorly, whether with gauze, cotton or the inflated rubber plug, whether applied simply as a mechanical pressure or saturated with styptics or oils, seemed useless. The slightest pressure brought to bear on this delicate mucous membrane stimulated bleeding at various points. When the patient finally left the chair he carried a simple light cotton plug in the anterior naris. Considering the time which this oozing of blood had consumed, and the actual loss of blood, it was rather unusual to see the patient active and able to take the cars home, traveling a distance of ten miles.

I have not seen the patient since, but have been informed that he is doing well, and thinks the nose requires no further attention.

One of the most noticeable features in this case, was the apparent impotency of the many well-tried and usually effective therapeutic measures employed in nasal hemorrhage. The second consideration of much value was the hæmophilic diathesis and the difficulties which are to be encountered in coping with this condition. Lastly, it should be an object lesson to many who regard nasal hemorrhage, traumatic or spontaneous, as of slight importance, and who frequently treat this condition indifferently, to carefully question every patient as to a hæmophilic predisposition.

3702 Olive street.

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EDITORIALS.

DIAGNOSTIC IMPORTANCE OF BLOOD EXAMINATIONS.

The prevailing opinion among the majority of the profession is that systematic blood work is entirely beyond their skill, and can only be done by specialists. This opinion is strengthened by many articles in medical journals being too technical to be readily understood by those who have had no opportunity of keeping up with the progress in hematology. Another stumbling block is, that blood examination is absolutely diagnostic in only few diseases, giving an index rather of condition than of special disorder. The fact is, that there are many conditions in which a blood examination, such as anyone with a little practice can make, will frequently establish a diagnosis, at any rate if taken in connection with clinical symptoms. On the whole, the routine examination of blood has in our hands been of far greater value than the routine examination of urine, and frequently one will complete the diagnosis of the other, or corroborate the findings. For instance, the presence of a leukocytosis and peptonuria is strong presumptive evidence of suppuration which, with the clinical signs, will generally locate the trouble. In one case we have located a cerebral abscess by this means. Diplococcus meningitis can be definitely differentiated from tubercular by the absence of this combined symptom in the latter. In this Southern country, in examination of blood for the

differentiation of malaria, typhoid, colon infection and yellow fever, and more especially the elimination of the hybrid "typho-malarial fever," every physician should be possessed of sufficient skill and apparatus to do this much of hematologic work. The simplest armamentarium would be, a suitable microscope, hemocytometer, hemoglobinometer, hematocrit, a few of the more common stains, and a Cabot's "Clinical Examination of Blood." For typhoid, colon and yellow fevers, a drop of dried blood can be sent to the nearest bacteriologist.

The formed elements of the blood are the red cells, white cells and plaques. The latter are so easily lost in a blood preparation that their increase or diminution furnishes diagnostic evidence of doubtful value in the hands of the occasional worker. The red cells are changed in amount of color (hemoglobin), in size, shape, and in exhibiting nucleated varieties. The non-nucleated are denominated by the terminal "cyte," e. g., erythrocyte (normal), macrocyte, microcyte, poikilocyte (irregular). The nucleated cells are called "blasts," e. g., normoblasts, microblasts, megaloblasts. "Oligo" indicates diminution, "poly" an increase; hence, oligocythemia, oligochromhemia, polycythemia, etc.

The white cells are variously classified, but for practical purposes Cabot gives a most descriptive classification of the varieties normally in the blood, and which are sufficiently differentiated with the eosin and methylene blue stain used for malarial parasites, so that both can be done in one spread. He distinguishes 1st, the "young" cell or small lymphocyte, which is the size of a red cell, and stains a deep blue with the above, leaving a slight rim of pale violet; 2nd, the adolescent or large lymphocyte, which is twice as large, paler, and has a broader margin of pale blue; 3rd, the adult, and far the most abundant, and denominated polymorphonuclear, or, as Benedict properly calls it, polymorphokarytic cell. This is the size of one and a half diameters of a red cell, or larger, and (with the same stain) has a pinkish protoplasm and a nucleus which stains blue, and has a great variety of shapes so as to appear multiple at times. 4th, is the senile cell, the eosinophile, which has the general shape and color of the third form, but shows numerous large granules, which stain intensely with the eosin, giving the appearance of gonococci densely grouped upon the protoplasm of the cell.

We believe this description will enable anyone who has never seen them to differentiate these cells by the stain mentioned. Their relative proportion in normal blood is as follows: Small lymphocytes 20 to 30, large lymphocytes 4 to 8, polymorphokarytic 65 to 70, eosinophile .5 to 2 per cent. Other varieties are "mastzellen," rarely found, and myelocytes, present only in grave conditions, as pernicious anemia, and in great quantities in splenic-myelogenic leukemia; they look like the third variety, but have a pale blue nucleus. The large lymphocytes are the ones most increased in lymphatic leukemia, the polymorphokarytic most in the leukocytosis. The difference between leukocytosis and leukemia is not a question of quantity so much as of proportion of the different varieties of white cells. Pathologic leukocytosis is the result of chemotaxis rather than phagocytism; the leukocytes, or their decomposition products, neutralize toxins by direct combination. Hypoleukocytosis or leukopenia (Cabot) is the result of negative chemotropism. Both are generally produced by infectious agents. In suppurative conditions especially there is a marked leukocytosis, whilst malaria, tuberculosis, typhoid and yellow fever are characterized by leukopenia, with a relative increase in lymphocytes. The eosinophiles are increased in the beginning of convalescence of malaria, in paresis, Addison's disease, and, as has been recently pointed out by Brown in the *Journal of Exp. Medicine* (May, 1898), enormously so in trichinosis, being in one case 37 per cent. to 68 per cent., while there was an absolute increase of leukocytes. This enormous increase, from .5 per cent. to 68.2 per cent., must be regarded as absolutely diagnostic, and should be borne in mind in the "razor-back" districts as a simple means of diagnosis.

The blood for spreads is taken from the cleansed finger tip by puncture. We prefer a "falcon" pen, from which one nib is removed. A very small drop is taken on a very clean slide and spread by the edge of a very clean, square coverglass, held at a slant like a brush, so as to make the thinnest possible film with least pressure. For fresh examination, the coverglass is simply dropped upon the blood. With a little practice, much information regarding size, color and quality of the red cells can thus be gained. Plasmodia are best sought in "fresh" blood, and even the varieties of white cells can be approximately made out. Colored spreads

are made by "fixing" the dried spread for an hour in a mixture of absolute alcohol and ether. Upon removal, the slide is dried by heat, a few drops of a one-quarter per cent. solution of Grübler's eosin in 75 per cent. are allowed to "bite" for five minutes, washed off, the water removed with a blotter, and then a half saturated aqueous solution of methylene blue, preferably .01 per cent. alkaline, with NaOH left on for five minutes, lightly rinsed off, dried and mounted in Canada balsam. This plan will be found superior to all others. In practice, we find the organisms most frequently during the paroxysm. We wish here to especially lay stress upon the fact that the only proper and scientific quinin therapy is that based upon blood examination. We have frequently seen very stubborn attacks of malaria brought to a sudden termination by this means, when the haphazard guess method had very nearly proved fatal to the patient. The embryonic stage of the development of the malarial parasite is the most susceptible to quinin.

The malarial organism is an animal like the ameba, and not a bacillus, as some seem to suppose. The tertian is most common and is readily differentiated, not by the patient's symptoms, but by having more finely granular pigment, which is more actively motile, and by the blood cells being larger and paler. Segmentation, which is extremely rare in the circulation, results in more embryones than the other varieties. The quartan has these characteristics just reversed. Both may give rise to quotidian and double quotidian paroxysms. The estivo-autumnal parasite causes the malignant forms, and is usually unpigmented or has one or two very large granules in the center. The crescents are never seen here, but in their stead we find apparently extracellular ameboid bodies, unpigmented, or a few large granules in a slow, oscillatory or rolling motion. Stained specimens show some irregular hemoglobin protoplasm around the larger ones, the smaller ones appearing to be free in the plasma. The hemoglobin percentage in malarial blood is greater than the blood count, owing to free hemoglobin in the plasma. The individual cells may be deficient in hemoglobin. We can always recognize malarial blood, even though no organisms be found. There are microcytes, degeneration and regeneration forms and pigment clumps in the plasma.

The subject of hematology is extensive, and does not admit of curtailment without destroying its value. We will therefore defer further consideration for a future article.

We do not wish to be understood as springing any surprises upon hematologists, unless it be on the subject of malaria, but feel that we have just ground for doing so in that field. We are addressing more particularly the general practitioner in the Mississippi Valley. W. K.

REPORTS OF SOCIETIES.

MEMPHIS MEDICAL SOCIETY.

STATED MEETING JUNE 7, 1898. DR. T. J. CROFFORD, PRESIDENT.

Dr. J. L. Jelks reported a case of *Complete Atresia Vaginæ* as follows:

Mrs. V. A. W., aged 32, married eight years, no children, about beginning of February last had high fever, which lasted about four weeks, and was accompanied by profuse vaginal discharge. No menses from February 1st until May 20th, when the operation revealed that atresia began one inch from the vaginal outlet, obliterating, from this point, the vaginal canal, including the fornices. This entire cicatricial band was dissected out, and the vaginal canal shortened by uniting in its circumference, with ten interrupted silkworm sutures, the upper and lower segments. About a quart of blood, the color and consistence of black molasses, escaped from the uterus, which was the size of a four-months pregnancy. Formalin irrigations were used in the after-treatment, which lasted ten days, when the stitches were removed. The temperature never went beyond 100° F., and there were no evidences of the slightest infection.

Dr. E. A. Neely reported a case of *Impacted Calculus of Left Ureter*, giving the following history:

The patient, a little boy 2 years old, was playing with his mother in the yard and suddenly dropped to the ground screaming with pain. After the usual home remedies had been tried and found wanting, the doctor was called in and found the little patient with his penis erect, suffering great pain and frequent desire to urinate. Morphia, hypodermatically, was at once administered, and while under its effects, tenderness and the presence of a hard, pea-like

body could be elicited in the course of the left ureter about on a level with the anterior superior spine of the ileum.

A diagnosis of impacted calculus of the left ureter was made. In four hours Dr. Neely returned to give another hypodermic of morphia, which was still absolutely necessary. Four hours after this Dr. Neely found the little fellow perfectly relieved, playful and cheerful.

Dr. Neely said that although text books taught that these cases were of frequent occurrence, this was the first case of the kind he had ever seen. The mother of the child watched for the stone to pass, but so far it has not been seen.

Dr. F. D. Smythe reported the case of a man 31 years of age, high liver and a drinker of champagne and alcoholics, whose father had been a sufferer from gout for a number of years. The patient had a very slow pulse, breathing was difficult, and sensation was lacking. Dr. Smythe, feeling that venesection was indicated, promptly bled him, giving him almost instant relief. Attacks of this nature had been coming on him at intervals for the past six or eight months, which made him apprehensive of heart trouble.

A careful physical examination revealed nothing bearing upon the case, with the exception of the urine, which showed, by Haine's test, 10 grams of sugar to the ounce of urine.

A strict diet, the free use of ozonated lithia water, and the exclusion of all alcoholics reduced the quantity of sugar to one half of one per cent. by the next morning. There is no disorder of the sexual desire or capacity, nor any of the nervous symptoms that accompany diabetes. The average amount of urine passed is 28 ounces per day. Examination of specimens from total quantity shows appreciable reaction, but that is all.

Uric acids and phosphates are increased. As a test, he took last night in Dr. Smythe's presence three glasses of Rhine wine, ate a few toasted crackers, and a few bites of Irish potato. This morning his urine showed almost as much sugar as at the first examination. Dr. Smythe feels that the case is not one of true diabetes, and has given a very hopeful prognosis. Dr. Smythe has had the urine examined several times by competent men, including Dr. Krauss, and spoke eulogistically of the safranin test for sugar as used by Dr. Krauss.

Dr. M. Goltman reported a somewhat similar case—that of a man 38 years of age, in whom he could produce glycosuria at will, by allowing him to eat a few stalks of asparagus. This patient, Dr. Goltman said, had no symptoms of diabetes whatsoever, outside of the sugar which appeared in the urine following the ingestion of asparagus. The patient was not much of a meat eater, living largely on vegetables; had no acetone or diacetic acid nor any symptoms that can be ascribed to them, and the blood corpuscles stained well with methylene blue, which is considered by some a very delicate test. Dr. Goltman gave it as his opinion that his case was one of purely *digestion glycosuria*, and asked what disposition should be made of an applicant for life insurance showing such a condition, at the same time quoting Purdy, who says that all cases of this nature are undermined and bad risks. Dr. Goltman also related a case of diabetes in an old syphilitic who presented marked ocular palsies and other nervous symptoms, and who died comatose, the autopsy revealing a diffuse endarteritis of the vessels of the brain, together with a gumma in the floor of the fourth ventricle which, he said, probably caused the glycosuria through direct irritation of the diabetic center.

Dr. Smythe related a similar case in which autopsy revealed a large syphilitic tumor of the brain.

Dr. J. H. Reilly wanted to know if there were any nervous or ocular symptoms in the last case Dr. Smythe reported, and stated that he thought the tumors to have been present a long time.

Dr. T. J. Crofford asked to be enlightened upon the ultimate pathology of diabetes.

Dr. Smythe, in closing, said that he only knew the pathology given in text books, which was at the same time both contradictory and unsatisfactory.

Dr. Neely read a paper on the *Treatment of Stricture of the Urethra.* He thinks the keynote to successful urethral work is the fact that the normal urethral caliber can only be determined approximately. The urethra is only a canal when traversed by liquid or an instrument. He does not agree to the idea that strictures are responsible for many reflex neuroses. The question of bladder drainage has never been put in any text book. The principle of drainage underlies all his urethral work. What are called strictures of large caliber are cases of chronic urethritis, with conges-

tion of the mucous membrane. Gradual dilatation with mild antiseptic irrigation is the best line of treatment. It is valuable in these cases of "congestive stricture," and also in organic strictures of the penile portion of the urethra. Resilient strictures must usually be cut. Deep strictures must be dilated, or if too tight to admit an instrument, external perineal urethrotomy must be done. (Dr. Neely showed a case of this character for which he had operated.) The object is to procure a large enough passage through the urethra to thoroughly drain the bladder. There is no arbitrary size to attain. Another point is, that a patient should never be told he is cured, for these strictures have a way of returning, to the detriment of the reputation of the surgeons who pronounced them cured. The patient should be instructed to pass a sound at intervals.

Dr. E. E. Haynes did not know of anything new to add to Dr. Neely's remarks. He quite agrees with him in a great many things he has told us of the treatment of strictures. Some things he has given us were new. It has been his great misfortune, as he terms it, to have had quite a number of urethral cases to treat, and he don't know anything so calculated to cause a physician to lose his reputation. He believes that a great deal of unnecessary cutting is done on strictures, and his experience, like Dr. Neely's, has been that it has been unnecessary to cut very many strictures. He has cut very few. He has cut what is termed a resilient stricture, such as was spoken of where, by dilatation, he seemed to have accomplished nothing; they seemed to do better by cutting. He finds that he can accomplish a great deal by gradual dilatation if he can have the patient to stick to him and have patience. He remembers of one patient he treated about three years ago, who had had gonorrhœa for three years, and never had the discharge stopped. It was when the use of permanganate of potassium irrigations was first begun. The urethra would not admit an instrument for irrigation, but only a filiform, and then two, and finally a very small sound. In six months the urethra would admit a No. 30 French, and the passage of the sound relieved the gonorrhœa without other treatment. After a cutting operation the sound must be used, and Dr. Haynes fails to see that cutting gives any advantage.

MEMPHIS PATHOLOGICAL SOCIETY.

STATED MEETING. DR. E. C. ELLETT, PRESIDENT.

Dr. G. B. Young, of the Marine Hospital Service, presented slides showing organisms of estivo-autumnal, tertian, and quartan malaria, all of which were stained in eosin and methylene blue, and hardened in equal parts of absolute alcohol and ether. Dr. Young gave a brief history of the discovery of the parasite by Laveran, and quoted the opinions and experiments of the leading hematologists. Quoting Barbacci, Dr. Young said that the year 1885 marked the beginning of two schools, representing essentially different views concerning the nature of the malarial parasite. The first school, represented by Laveran and his followers, believed, and still believe, that the malarial parasite is a single polymorphous organism, and that there is a constant relation between the different forms in which it appears and the various types of fever. The second school, headed by Golgi, believes "that one may distinguish different forms of parasites associated with the different forms of fever." Thus, Laveran says "this parasite is to be seen in a considerable variety of forms, which one can, however, resolve into the four following types: 1, spherical bodies; 2, flagellated bodies; 3, crescentic bodies; 4, segmenting bodies, or rosette forms."

He argues that crescents are merely encysted forms of the parasite, developing from the spherical bodies; that they show a much greater resistance to quinin than the spherical bodies; that they may be seen to change into round, ovoid and flagellate forms; that one sees certain forms of the parasite oftener than others—the crescents, for example, in relapses and malarial cachexia—and that, therefore, there does not exist a constant relation between the forms under which the hematozoa appear in the blood and the clinical manifestations of paludism. But Golgi, in 1885, in a singularly careful and accurate study of the life history of the quartan parasite, embracing 22 cases of quartan fever, determined, beyond question, the close relations which exist between the quartan organism and the clinical symptoms. It was Golgi who pointed out, further, that the beginning of every malarial paroxysm corresponds to the ripening of a generation of parasites; that the severity of the attack depends upon the number of parasites present in the blood; that the quartan parasite requires seventy-two hours for its

complete development, and that segmentation begins eight to ten hours before the paroxysm, and continues during its first hours. These, or Golgi's laws, were confirmed a few months later by Osler in Philadelphia. It also remained for Golgi to point out the differences between the quartan and tertian parasites, showing the latter to be more actively ameboid, the segment granules smaller, lighter in color, and more active, the rosette forms containing more segments (from 15 to 20), and that it takes forty-eight hours for its complete development.

Marchiafava and Celli too, showed that Golgi was dealing with fever pursuing a regular cyclical course; that these fevers were never pernicious, and yield, often without, and always with, quinine, whereas, the cases of estivo-autumnal (Roman fever) show, usually, an acyclical course; attacks often occur daily, or may be engrafted one upon the other, with or without chills, the patient complaining only of continued fever, often giving rise to grave anemia. In quartan and tertian fevers they often saw segmenting forms in the circulating blood; in estivo-autumnal fever they were rare. They were common, however, in the internal organs, particularly in the spleen, and, in pernicious cases, often in the cerebral capillaries. They found, as did Councilman, more crescents in the spleen than in the peripheral blood, and agree with Laveran that they are more common after continued attacks. In contrast to Laveran, they consider the appearance of segmentation in crescents to be vacuoles; in other words, degenerative forms. Attempts to cultivate the malarial parasite have been uniformly unsuccessful. Sacharow, however, has been able to keep alive for a week, and afterward stain, estivo-autumnal parasites, in leeches which had been kept on ice. Rosenbach likewise applied leeches in a case of tertian fever, and demonstrated living organisms at the end of forty-eight hours. So that, while cultivation experiments have failed, inoculations have been fruitful to the extent of confirming Golgi, who says, "that certain definite varieties of parasites are associated with certain definite varieties of fever." Gerhardt was the first to show that malarial fever could be transmitted by inoculation of one patient with the blood of another, and this long before the parasite had been discovered. These experiments were, after the parasite was discovered, confirmed by Marchiafava, Celli, Baccelli, Antolisei and others, all of whom substantiated Golgi's original laws.

Dr. Young was inclined to accept Manson's belief that the mosquito played an important role in the transmission of the disease, since the disease could, so far, only be reproduced by inoculation. With regard to the symptoms, he accepted Baccelli's theory, that they resulted from toxemia arising from (*a*) destruction of the red cells by parasites, and (*b*) the entrance into the circulation of poisons, due either to the act of sporulation or to substances set free from disintegrated red cells. Golgi accepts this view of the toxic origin of the fever, and it is the view accepted by most hematologists today. Here Dr. Young quoted several very interesting cases of pernicious malaria, including the comatose and paralytic varieties, all of which occurred in non-residents.

It was comparatively rare to see pernicious malaria in Memphis; it was common, however, in the Mississippi Delta and the swamps of Arkansas, and the cases recorded by him were from these sections as a general rule. As pernicious malarias were the result of estivo-autumnal infection, he did not mean to imply that the estivo-autumnal parasite was unknown in the Memphis district, as this would be a mistake; he did, however, wish to impress the society with the fact that in all the blood work he has done in Memphis, not a single crescent has he observed, those presented being from a collection mounted in Baltimore, where they are quite common. He called attention to the presence of a small, round, scintillating, extracorpuscular, body about $\frac{1}{3}$ the size of a normal red blood disc, which seemed to be associated with a train of symptoms of paludism, including the anemia and enlarged spleen, which he considered to be the prototype of the crescent as seen in other localities, and which was first introduced to him by Dr. Krauss of this city. This little body, he said, was very resistant to quinin, no matter how given or in what doses. On these points, Dr. Young stated, the last had not yet been said; for, while it was true that the defined periodical fevers were readily amenable to quinin, the *continued malarial fevers* and the paludism of the little organism already referred to and hitherto undescribed, was little or not at all affected by it. In these cases change of climate, especially to mountainous regions, was the best therapeutic as well as prophylactic measure. Arsenic, to the limit of tolerance, was also a valuable agent in these cases.

In referring to the death rate from malarial diseases in the

city of Memphis, Dr. Young produced charts showing the relative rate of deaths between typhoid and malarial fevers, which showed the mortuary rate from typhoid to be so great as almost to amount to an epidemic, and this, in face of the fact, that Memphis as a whole is free from typhoid when compared with other cities. This is undoubtedly an error, and may be due, to some extent, to carelessness in making out death certificates, and to errors in diagnosis. But these two factors cannot explain away entirely the existing discrepancy. Dr. Young called attention to the fact, as shown in the mortuary charts presented, that there existed a marked parallelism of deaths between malaria and typhoid during the malarial seasons,which suggests the probability that many cases called typhoid are malaria, hence, many more deaths from malaria occur than are reported as such, which makes this disease a greater factor in the compilation of mortuary statistics, and one more to be feared than is usual. It was a sad mistake, he said, to consider cases typhoid which resisted calomel and quinine for three days.

The discussion of the paper and demonstration was liberal. but lack of space forbids its insertion.

PROGRESS OF MEDICINE.

Gauze Packing for Suppurating Ears.—Alice Ewing (*Laryngoscope*, June, 1898) advocates daily packing of all suppurating ears with iodoform gauze as the best method of treatment. If the disease were confined to regions readily reached by the douche, it could be easily disposed of; but we have to deal with a series of bony recesses accessory to the tympanum, furnishing a favorable temperature and culture soil (blood serum) for bacterial growth. These recesses cannot be cleansed by douching, but may be emptied by the action of a capillary drain. In recapitulation the author says that gauze packing is more correct in principle and more satisfactory in practice than anything in use in the treatment of suppurating ears. Incurable cases can be kept more comfortable by this than by any other means, and it saves the surgeon's time (?) It is suitable and safe for home treatment. It has no contraindications.

Deflections of the Nasal Septum.—Thos. C. Evans (*Louisville Journal of Medicine and Surgery*, June, 1898), after a brief reference to the symptoms of septal deflections, describes the operation devised by Morris J. Asch as the one which has given him the best results. The anatomy of the parts concerned is shown in Fig. 1,

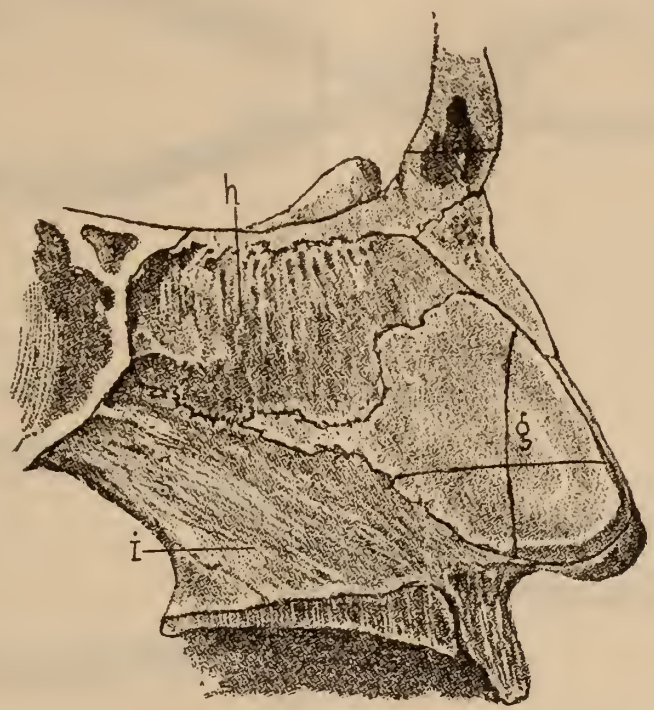

Fig. 1

the cartilage of the septum (marked g) being the portion usually deflected, and giving an appearance such as seen in Fig. 2. General anesthesia is necessary. The operation consists in dividing this cartilage into four triangular parts by means of a crucial incision, as indicated by the lines in Fig. 1. The horizontal incision

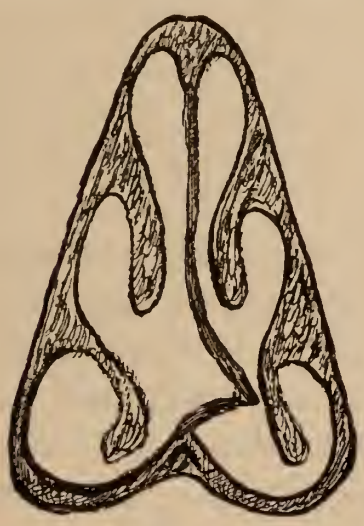

Fig. 2

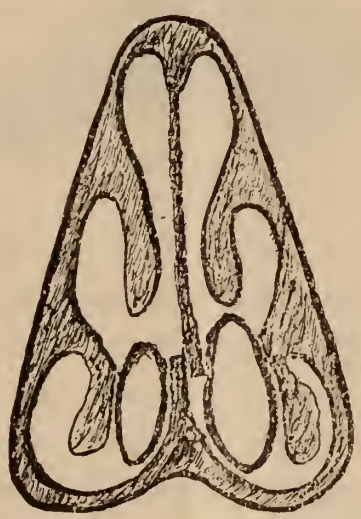

Fig. 3

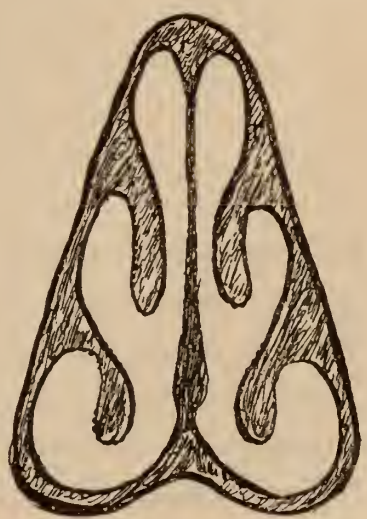

Fig. 4

is made first with specially devised scissors (Fig. 5), the cutting blade being inserted into the most patent nostril, and the vertical incision next made. These are extended in all directions to the borders of the cartilage by means of a blunt-pointed knife. Then,

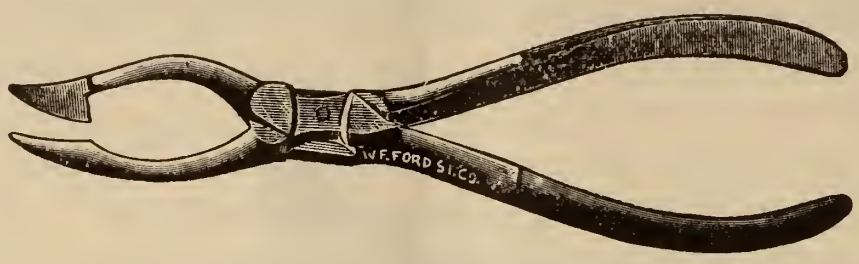

Fig. 5

by grasping each segment with septal forceps (Fig. 6) and twisting it, its attachments are loosened, till the finger inserted into the nostril feels no resistance to placing the fragments in the median

Fig. 6

line. On this free loosening of the attachments of the cartilaginous fragments depends the success of the operation. With the fragments in position, after cleansing they are kept so by the insertion of Asch's rubber splints (Fig. 7) as shown in Fig. 3. Bleeding is very free until the introduction of these supports. In from twelve to twenty-four hours irrigation with hot boracic acid solution should

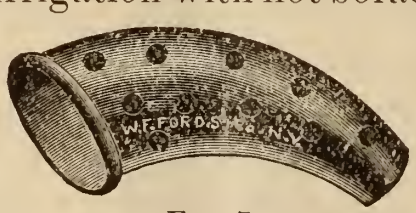

Fig. 7

be practiced through the tubes, and repeated every three or four hours. On the third day the tubes may be removed and cleansed. This is repeated daily, and after a week may be done by the patient. The tube should be worn on the stenosed side constantly for six weeks, and during the night for four or five weeks more. The tube from the open side may be removed in two weeks. The ultimate result is shown in Fig. 4.

Has Electricity Ceased to be a Useful Therapeutic Agent in Gynecology? — Egbert H. Grandin (*Medical News*, June 11, 1898) says: From 1884 to 1892 I delved deep into the mysteries of electricity and fully equipped myself for the formation of an unbiased opinion in reference to its sphere of utility in the treatment of the diseases of women. The outcome of my study and of my practical experience was the publication of a monograph on the subject, the keynote of which was a protest against the ultra enthusiasm which pervaded other workers in a similar field. As I read that monograph in the light of views held by me today, I regret little that I wrote then, with the single exception of the opinion I advanced in regard to the treatment of ectopic gestation, an opinion founded on what was then the weight of distinguished authority, controlled by a limited amount of personal experience. The doctrine preached by me in this monograph was simply this: Electricity constitutes a valuable adjuvant to other routine methods of treatment; its role is palliative, pure and simple. Today, even as I have rejected certain other routine methods of treatment because experience has taught me their futility, even so have I shelved electricity, because experience has taught me that cure is possible through resort to surgery, and that this is better than palliation through electricity. Five years ago my electrical outfit was an elaborate one; today I possess no outfit, having given it away to a colleague whose credulity was born as mine died. And yet I would not have you think that I was not as honest in intention in the days when I used electricity as a remedial palliative agent as I am today when I discard it. My change in belief has been due to causes of a twofold nature. In the first place I gradually emerged from a pathology which held sway for years over the minds of the leaders in the profession into the clearer and truer which rules today; and in the second place I found out practically that there were speedier ways of accomplishing the cure of certain conditions than through electrical treatment, and that in other conditions electricity was an absolute failure on account of the different pathology underlying them than that which I formerly had in mind. In short, I had been taught badly, although my teachers were unquestionably honest in belief, and I emerged from under their influence a little later than some of my colleagues, but with the decided advantage over them that I declined to condemn absolutely an agent until

after I had tested it and found it wanting. My policy was and still is: test all things, and after the test hold fast to that which proves good.

Radical Cure of Inguinal Hernia by Prof. Kocher's Latest Method.—J. J. Buchanan (*Phil. Med. Jour.*, June 25, 1898) reports Kocher's latest method for the radical cure of inguinal hernia.

Its advantages are: 1, simplicity; 2, the tendinous structures are left intact; 3, a short confinement to bed; 4, a large percentage of cures.

The steps of the operation are:

1. Incision down to the aponeurosis of the external oblique muscle, ¾ inch above and parallel to Poupart's ligament, extending from the external ring to a point midway between the internal ring and the anterior superior spine. (Fig. 1.)

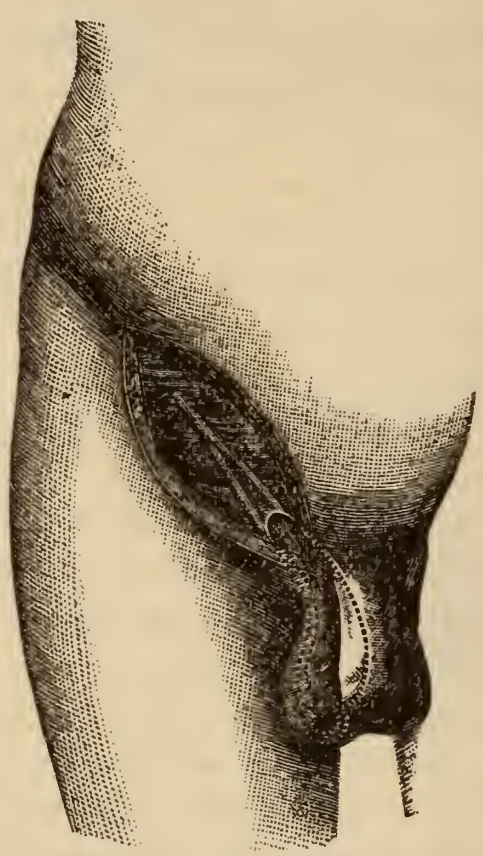

Fig. 1

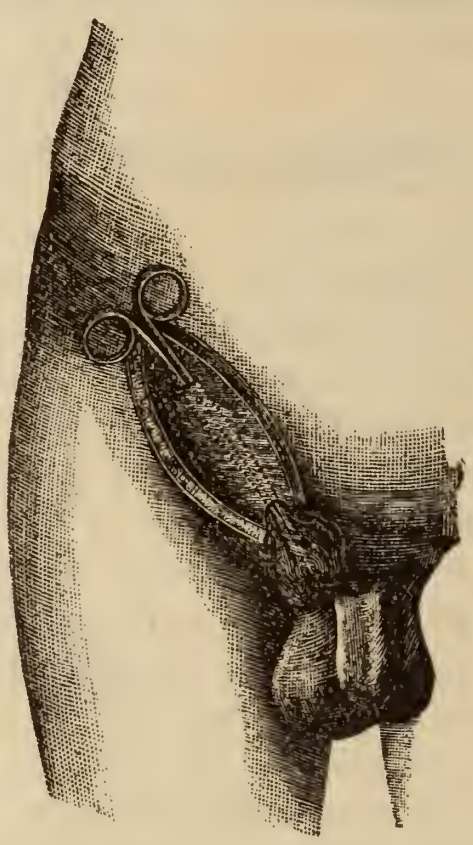

Fig. 2

2. The sac is loosened from its surroundings, opened and the contents dealt with.

3. Separation of sac from structures in the inguinal canal with the finger or a blunt instrument.

4. An opening through the abdominal wall, within the external angle of the first incision, long enough to just permit the sac to be drawn through it.

5. The passing of a curved forceps through this opening into the internal ring, and down the inguinal canal (Fig. 2), grasping the fundus of the sac and drawing it back through the small opening, thus turning it inside out, and fixing it with a couple of stitches to the tendinous structures, and cutting off the redundant portion. (Fig. 3.)

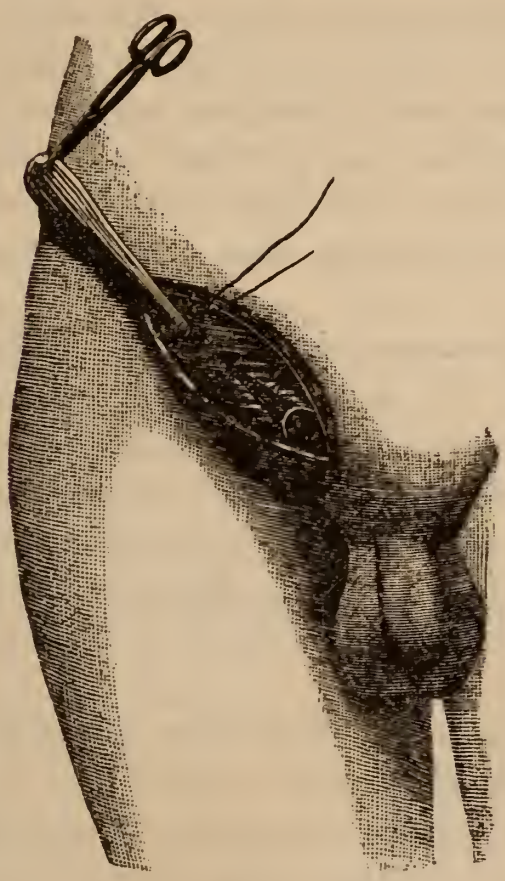

FIG. 3

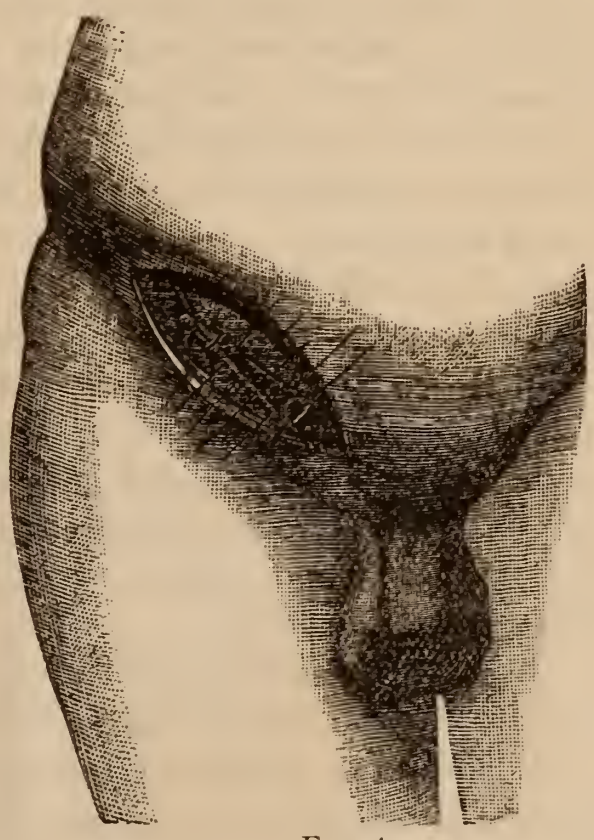

FIG. 4

6. Closing the inguinal canal with buried sutures, which approximate its walls and are tied on the surface of the aponeurosis of the oblique. (Fig. 4.)

7. Closing the external incision.

Contraindications are: 1, strangulation above the internal ring; 2, a very delicate sac; 3, old hernias with thickened adherent sacs; 4, dilated rings and shortened canal.

Statistics show recurrence in 3 per cent. with no mortality. The time in bed is ten to fourteen days.

Ether vs. Chloroform.—Dr. Keefe (*Boston Medical and Surgical Journal*, Dec. 23, 1897), after a careful review of the subject, comes to the following conclusions:

1. Statistics are at present of little or no value in deciding as to the relative dangers of chloroform and ether, because, as the author has shown in a previous paper, *the deaths under both bear a lower ratio to the inhalations than the sudden deaths in those who had not taken an anesthetic bear to the population.* (The italics are ours.)

2. Ether is a safer anesthetic in proportion as it is weaker, bearing a relation to chloroform of about one to five. The danger of chloroform is not so much inherent to it *per se* as to its relative greater strength, and the greater care and experience required in its administration. Almost any physician can give ether, but not one in twenty can administer chloroform correctly: just like any child can handle a toy engine, but not every man can handle a steam locomotive.

3. The difficulty with both chloroform and ether in the presoporous stages, are, in nearly all cases, due to respiratory spasm and the consequent heightened arterial tension and venous congestion. This is very likely to be unduly prominent in the brain on account of recumbency, and the few muscular fibers in its vessels in comparison to the general circulatory system. For this reason it is neither so well able to resist the onset by contracting its arteries or emptying itself.

4. In the post-stertorous stage, after long application, the death is most likely to be caused by anemia and cardiac paralysis.

5. The best medicine for the first kind of interference is amyl nitrite, belladonna and strychnia; and for the second digitalis and strychnia, supplemented by electricity and all the other movements recommended by Dr. Hill.

6. The anesthesia of ether being loud and lifelike, an accident or interference is noticeable on the instant, whereas chloroform produces so quiet a sleep that there is not so distinct a warning of accident until too late; consequently it requires a degree of vigilance and attention that few possess; so that the administrator of chloroform, if conscientious, feels that he assumes a greater responsibility than the operator.

7. Chloroform is a more satisfactory anesthetic for short operations, where the sopor need not be renewed or continued; for

obstetrics, where the anesthesia need not be complete; and for patients with lung and kidney disease, and children.

8. Ether is pleasanter and safer (for the vast majority of physicians) to continue the anesthetic state after having been induced by chloroform.

9. The author does not believe there is any well-marked difference in the manner of death under ether or chloroform; the stage of the anesthesia has more to do with it than the agent.—*Ex.*

Dysmenorrhœa and Sterility.—Dr. W. Gill Wylie (*Amer. Gyn. & Obst. Journal*, June, 1898) described to the New York Obstetrical Society the method he employs in the treatment of these conditions as follows: When a patient comes to me suffering from dysmenorrhœa and sterility, if the os is sensitive (and this is an indication for the tube), after excluding disease of the Fallopian tubes and other complications, I put her under ether, curette the uterus thoroughly after dilating freely but not enough to split the cervix, and introduce the fenestrated drainage tube. I also insert a retroversion pessary to keep the tube in place by holding the os uteri backward. No gauze is employed. A vulva pad is applied, and the patient put to bed, where she is kept quiet for a week. She is then allowed to get up and move about her room for several days. The tube is then removed, and if she menstruates without pain at her next period, nothing more is done. If she does have pain, several months later I curette again and introduce a smaller tube, keep the patient in bed for a week, and then let her go home wearing the tube, enjoining her to keep the parts clean by an occasional douche. After the patient has passed through two or three periods, the tube is removed. Of course, all cases in which there is tubal disease are excluded. I have never had a case in which salpingitis or sepsis followed this treatment, although I have been employing it for ten years. I can take ten cases of typical dysmenorrhœa, with anteflexed uteri, and in a few weeks I will cure half of them; in a few months nine out of ten can be cured. In rare cases the treatment has to be repeated a third time. In sterility the results of this treatment have been marvellous. I have cured of sterility women as old as thirty-nine. All are pregnant or have had children. The treatment is safe and successful.

THIOSINAMINE — A CLINICAL CONTRIBUTION TO ITS STUDY.—Geo. F. Suker (*Ophthalmic Record*, May, 1898) gives his experience with this drug in ophthalmic practice. Thiosinamine is not a new chemical product. It is obtained from mustard oil and has been known to chemists since 1828 (Berzelius), and used in medicine since 1892. Hebra has used it with good results in lupus, and Tousey discovered its almost specific action in keloids, and its softening and relaxing influence on old cicatrices.

In a dose of from $\frac{1}{2}$ to 5 grains a day it acts as a mild tonic and diuretic. It possesses the power of breaking down leucocytes, which soon after increase in number. The actual cause of this action is undetermined, but it belongs in the same category as urea, tuberculin, peptone, etc. (Richter). The long-continued administration of a large dose (6 to 10 grains) causes nausea, headaches and malaise, without greater therapeutic value than small doses.

While often used hypodermically, Suker finds it satisfactory to give it in capsules by the mouth, starting with 1 grain a day and increasing slowly to 3 grains, intermitting for two weeks at intervals of six or eight weeks.

Suker has employed the drug in corneal opacities and exudative choroiditis. In two cases of the latter disease, thiosinamine brought vision from $\frac{1}{6}$ to $\frac{2}{3}$ in four months in one case, and from $\frac{1}{4}$ to $\frac{1}{2}$ in four months in another. In one case of corneal opacity the vision was $\frac{1}{10}$ and $\frac{1}{6}$, and was improved to $\frac{1}{4}$ and $\frac{1}{3}$ in five months, and a cicatricial ectropion greatly benefited by softening the cicatrix. Another case improved from $\frac{1}{4}$ to $\frac{1}{2}$ in six months.

Suker has noticed, as Tousey did, that whenever the drug is administered during a latent or mild inflammation, the trouble is apt to be fanned into activity.

ENDOCARDITIS CURED.—Starck (*Jahrbuch f. Kinderhk.*, vol. xlvii, nos. 2 and 3) cites the case of a little patient 11 years old who, during a second attack of rheumatism, developed an endocarditis involving the mitral valve. Treatment consisted of sodium salicylate internally, and an ice bag to the heart. In six weeks the child was cured, the heart sounds and area being quite normal. Authentic cases of healed endocarditis following rheumatism are certainly not numerous.—*Am. Journal of Obstetrics.*

THERAPEUTIC NOTES.

FOR CONGESTIVE HEADACHES:

℞ Ol. eucalypti, f ʒ i
Ft. caps. No. xii.
Sig.: One every four hours.

This is said to be often a valuable remedy in cases unaffected by the coal-tar preparations.—*Therap. Gazette.*

FOR ATROPHIC RHINITIS:

℞ Sodii bicarb.,
Sodii biborat., āā f ʒ iii
Ext. pin. canaden., fl., f ℥ i
Glycerinæ, f ℥ iv
Aquæ q. s. ad., f ℥ viii
M. Sig.: Add one ounce to a quart of water, and use as a spray.

This mixture is slightly effervescent, and should be left uncorked till effervescence ceases.

FOR HOARSENESS:

℞ Liq. ammon., Fortior, m x
Syr. acaciæ,
Aq. menth., pip., āā f ʒ iiss
M. Sig.: To be taken at one dose.

This mixture was used with great satisfaction by Napoleon.

FOR DIPHTHERIA:

℞ Menthol, ʒ iiss
Toluol, ʒ ix
Alcohol, f ʒ xv
Liq. ferri sesquichlorati, f ʒ iss
Sig.: For local use.—*Loeffler.*

FOR CYSTITIS:

℞ Pot. bicarb., ʒ iiss
Tr. hyoscyami, f ʒ vi
Buchu, fl. ext., f ℥ ii
Aqua, q.s., ad., f ℥ iv
Sig.: A teaspoonful every four hours, or oftener if necessary.

FOR TONSILLITIS:

℞ Sodii salicylat., grs. xvi to ʒ iiss
Tr aconiti (Flemings) gtt iii to f ʒ ss
Tr. guaiaci ammon., gtt xvi to f ʒ vi
Ess. pepsinæ, q.s., ad., f ℥ ii
Sig.: Teaspoonful every four hours.

FOR CHRONIC MALARIA:

℞ Liq. potass. arsen., f ʒ i
Ammonii iodi., grs. xxxvi
Pepto-mangan, f ℥ vi
Sig.: Tablespoonful after meals.

FOR ACID DYSPEPSIA WITH CONSTIPATION:

℞ Magnesia calc., ʒ iv
Bismuth subnit.,
Calcis phosphat., āā ʒ vi
M. Sig.: An even teaspoonful before meals.

This is the Compound Alkali Powder.
R. B. Maury.

FOR TYPHOID FEVER:

℞ Salol,
Thymol, āā ℈ ii
Guaiacol carbonat., ʒ ss
Bismuth subnit, ʒ i
M. Make capsules No. xx.
Sig.: One every three hours.

FOR DIARRHŒA—ACUTE OR CHRONIC:

℞ Pulv. sacchar. alb.,
Pulv. zinziberi, āā ʒ i
Sodii bicarb., ʒ iv
Pulv. acaciæ,
Bismuth subnit., āā ℥ i
M. Sig.: A teaspoonful once in four or six hours.

This is the well-known Compound Bismuth Powder.—*R. B. Maury.*

NEWS AND NOTES.

Dr. W. B. Rogers has gone east for the summer.

Dr. S. H. Chester of Jackson, Tenn., died on June 10, 1898.

Dr. Wm. Pepper is being urged to make the race for Mayor of Philadelphia.

Dr. Owen Stone, recently of Greenville, Miss., has removed to Bay St. Louis.

Dr. J. A. Crisler, formerly of Canton, Miss., has removed to Yazoo City, Miss.

Dr. M. B. Herman has returned to the city after a month's absence at the seashore.

Dr. Allison Brown is associated with Dr. B. G. Henning in the absence of the latter's assistant, Dr. Hall.

Dr. R. B. Maury, of the *Lancet*, will spend the months of August and September along the coast of Maine.

Dr. Wm. Osler will succeed Dr. Wm. H. Welch as Dean of the Johns Hopkins Medical School in October.

Dr. R. S. Stanley has gone to Europe for the summer, and during his absence his office is occupied by Dr. Frank A. Jones.

Dr. E. A. Neely of Memphis spent a portion of the month of June at Old Orchard, Maine. He returned home early in July.

Nathan S. Davis, m.d., Dean of Northwestern University Medical School, Chicago, has, owing to his advanced age, resigned that office.

Dr. Wm. Krauss, of the *Lancet*, has been appointed a member of the State Board of Health, and is Chairman of Committee on Contagious Diseases.

Dr. T. E. Murrell, Professor of Ophthalmology in Barnes Medical College, St. Louis, and formerly of Little Rock, Ark., died of tuberculosis in Denver, June 26th, 1898.

The Atlanta Medical College and the Southern Medical College of Atlanta have consolidated, and the new college will be known as the Atlanta College of Physicians and Surgeons.

Dr. Samuel Treat Armstrong, late of the Marine Hospital Service, and formerly in charge of the Marine Hospital here, has been appointed a brigade surgeon in the United States Army with the rank of Major.

Dr. J. R. Tackett, of the *Journal of the Mississippi State Medical Association*, is now an acting assistant surgeon in the United States Army. During his absence the *Journal* is edited by Dr. H. M. Folkes.

Dr. R. C. M. Page of New York died June 19th, from a stroke of apoplexy. Dr. Page was best known as a teacher in the New York Polyclinic and as the author of a text book on "Practice of Medicine" and a work on "Physical Diagnosis."

Dr. Jas. W. McLane, after thirty years of service as a teacher, has resigned the chair of obstetrics in the College of Physicians and Surgeons of New York. The vacancy has been filled by the appointment, with the title of Lecturer in Obstetrics, of Edwin B. Cragin, M.D.

Dr. E. M. Holder has been appointed visiting physician to St. Joseph's Hospital, *vice* Willett resigned. The vacancy on the surgical staff, occasioned by the death of Dr. A. B. Holder two years ago, was recently filled by the appointment of Dr. W. B. Rogers. There is still a vacancy on the gynecological staff.

Drs. Austin Flint, Professor of Physiology, Frederick S. Dennis, Professor of Principles and Practice of Surgery, and Samuel Alexander, Professor of Genito-Urinary Surgery, who recently resigned from the faculty of the Bellevue Hospital Medical College, have been appointed to similar positions in Cornell University Medical College.

Prognosis by Proxy.—It is related of a noted English Bishop who had for years nursed the fear that he would some day become paralyzed, that on one occasion at a dinner, he suddenly interrupted the guests at the table by exclaiming that his worst fears had been

realized at last; that he was paralyzed in his right lower limb; that he had been pinching his thigh for some moments and was unable to detect the slightest feeling. A lady sitting next to him assured him that he was mistaken, for it was her limb he had been pinching instead of his, the silk of the lady's dress being difficult to detect from the silk of the Bishop's robe.—*Ex.*

As an antidote to a "bad quarter of an hour," we would respectfully commend the "Impressions of a Tenderfoot" of the Denver meeting of the American Medical Association, published in the *Atlantic Medical Weekly* of June 25th. The impressions are very accurate, as all who were there will testify, and they are most refreshingly recorded.

Owing to the labors of the physicians generally, and Dr. Wm. Pepper and Dr. John K. Mitchell in particular, the Philadelphia councilmen have been forced, after a disastrous epidemic of typhoid fever, to pass a bill which provides for the outlay of several million dollars for the erecting and maintaining of a proper system for the filtration of water.

The New City Hospital was formally opened on July 1st, and the patients transferred from the old building on July 2nd. Our announcement that the new City Hospital was under the control of a visiting staff was premature. It is thought one will be appointed, and the expectation was that the appointments would be announced when the new building was opened.

Cincinnati has recently appointed as health officer, "Dr. ———, a well-known advertising medium," which called forth the following from the Academy of Medicine:

"Resolved, That it is the sentiment of the Academy of Medicine that we protest against the appointment of the present health officer as an insult to the medical profession and a danger to the city."

The daily press speaks of this as a dastardly persecution, by the doctors, of an "honorable gentleman and a good citizen."

Alcohol Injections for Cancer.—Kuh has obtained favorable results in cancer by injections of absolute alcohol, in doses of from three to thirty minims.

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ORIGINAL ARTICLES.

NEURASTHENIA: ITS CO-RELATION TO THE PHYSIOLOGY AND PATHOLOGY OF THE FEMALE GENERATIVE ORGANS.*

BY F. SAVARY PEARCE, M.D.
Instructor in Physical Diagnosis, University of Pennsylvania; Physician to the Out Patient Department, St. Agnes Hospital;
AND
H. D. BEYEA, M.D.
Assistant Gynecologist University Hospital; Instructor in Gynecology, University of Pennsylvania; Assistant Surgeon to the Gynecean Hospital.

This investigation bears upon a subject that has been considered in the past unconnectedly and in its side lights, mainly so from the majesty and intricacy of the whole subject, and therefore not yet gotten to the desideratum of clear proof of cause and effect for any practical usefulness in medicine. Admitting unquestionably from the outset the above statement in its fullest bearing, this study has been made by the writers from the gynecological and neurological standpoints, hoping that by combined action the most unbiased opinions may be expressed, and therefore of greater interest to medicine; that the contrariety of known facts may be in part dispelled, and perhaps new and better co-relation made of the complex whole.

In the vast literature of the subject collected within the past fifteen years, and particularly within the past five years, it is shown

* Read before the Philadelphia County Medical Society, June 22, 1898.

that the treatment of diseases of women has come to be better understood. And since ovaries are removed with increasing frequency, and at the present time with little danger, the subject has become of still greater importance. The gynecologist has come to the time when he considers not only the surgical, but to weigh more seriously methods of conservatism and associated medical or neurological diseases of his patients. He has become somewhat more harmoniously in action with the neurologist.

There has been in the past, and is even at the present time, a great deal of controversy regarding the relation of certain diseases of the female generative apparatus to that of the nervous system. This controversy has been mostly in relation to gross neurological maladies, the neuroses—such as insanity, hysteria and epilepsy—and very little has been said as to those to us more important and more frequent class of sufferers, the neurasthenic women.

Admitting the same co-relation if any may exist in a like measure in the male, but as disorders of the reproductive organs are more frequent, and as a rule more serious in the female, we propose to limit the study to these more exaggerated states occurring in women.

We know the various bearings of the subject, as indicated above, have been considered by the best men at home and abroad; but this consideration we might say, has always been unconnected; i. e., on the one hand it has been considered by the neurologist without sufficiently definite knowledge of the gynecological disease and its relation to the nervous system—he has been unconsciously biased in his opinions; on the other hand, the gynecologist, with the rush that has been characteristic of this branch of surgery, has in the past, and even up to the present, practiced mutilating operations on women without due consideration of their cause and effect; he too has been biased in his opinions, looking often to the perfection of his surgical case and the statistics of operations rather than to the good resulting, or to the serious constitutional conditions that may remain as the aftermath.

Undoubtedly we must consider the seriousness of the heretofore widespread practice of ablation of the ovaries; but, as said, conservatism is now being more seriously considered, and such contributions as "Conservation of the Ovaries" are frequently in evidence. Indeed, precision as to whether an ovary or tube should be removed in a particular case and the uterus left behind, or whether the womb

should be removed leaving the ovaries behind, are questions now being promulgated for the best issue of the case.

This further leads to the thought of what cause or effect in producing nervous disease may ablation of such important organs be. Is it alone the removal of an internal secretion, or is it disturbance of important cerebro-spinal and vasomotor nerve mechanism (or both) that are etiological factors in the case? Again, as to the subject under consideration, nervous exhaustion, can we determine here which cases are essential, and which cases are secondary or symptomatic neurasthenias or allied states?

A recapitulation of our present knowledge of the anatomy of the connection of the reproductive organs with the nervous system is here in place.

According to the most recent and exact observations by Winshied, in a monograph entitled "Neuro-pathologie ünd Gynäekologie, Eine Kritische Zusamen stellung iher physiologischen ünd pathologishen beziehung, Berlin, 1897, S. Karges," there exists an intimate anatomical relation between the genitalia and the nervous system. The female genitals are supplied by both spinal and sympathetic nerves. The internal genitals, uterus, ovaries and tubes, are supplied by the sympathetic alone, while the external genitals are supplied by both systems. These two systems have intimate inosculations with one another.

Cerebro-spinal Branches.

From the cerebro-spinal system the following branches extend to the genitals:

I. From the plexus lumbalis extends:

(1). The nerve ileo-inguinalis, passing through the inguinal canal, supplies the skin of the labiæ (n.n. labiales anteriores).

(2). The nerve genito-curalis divides into—

(*a*). The nerve spermatic internis, which extends with the round ligament to the labia majora, and inosculates with the sympathetic spermatic plexus, and—

(*b*). Nerve lumbo-inguinalis, which supplies the skin of the upper thigh beneath the inguinal fold.

II. From the plexus pudendalis, arising from the combination of the inferior portion of the plexus ischiaticus with the fourth and fifth sacral nerves, the following branches:

(1). n.n. hemorrhoidales medius and inferior supply the fundus uteri and the bladder, and have intimate inosculations with the sympathetic n.n. hemorrhoidales.

(2). n. pudendis, extending with the artery pudenda communis, divides into—

(*a*). n. perinealis, which supplies the transverse perinei, the external and internal sphincter ani, the bulbo-cavernosus, and the skin of the greater and lesser labiæ—as the n. labialis posterior, also the skin of the perineum.

(*b*). The n. dorsalis clitoridis supplies the glands clitoris and the upper part of the labia minora, and has a very intimate inosculation with the plexus cavernosus of the sympathetic.

Sympathetic Branches.

The sympathetic nerves distributed to the genitals have their origin in the solar plexus cœliacus. From this ganglion arise the branches which supply the female genitals, as follow :

(1). The plexus renalis sends direct branches to the ovaries.

(2). The plexus spermatici, from which extends fibres, with the artery spermatici interni, to the ovaries, tubes and the fundus uteri, and possesses inosculations with the plexus utero-vaginalis. Besides this, the plexus combines with the n. spermaticus internus, which latter arises from the genito-crural.

(3). The plexus hypogastric inferiores lateralis extends to both sides of the rectum. They are combined with the first, second and third spinal sacral nerves. From this plexus arise the following important branches to the genitals :

(*a*). The plexus utero-vaginalis, containing very many small ganglia, lies between the folds of the broad ligament. It extends with the uterine artery and surrounds the cervix uteri and upper vagina. There are numerous inosculations with the second, third and fourth sacral spinal nerves.

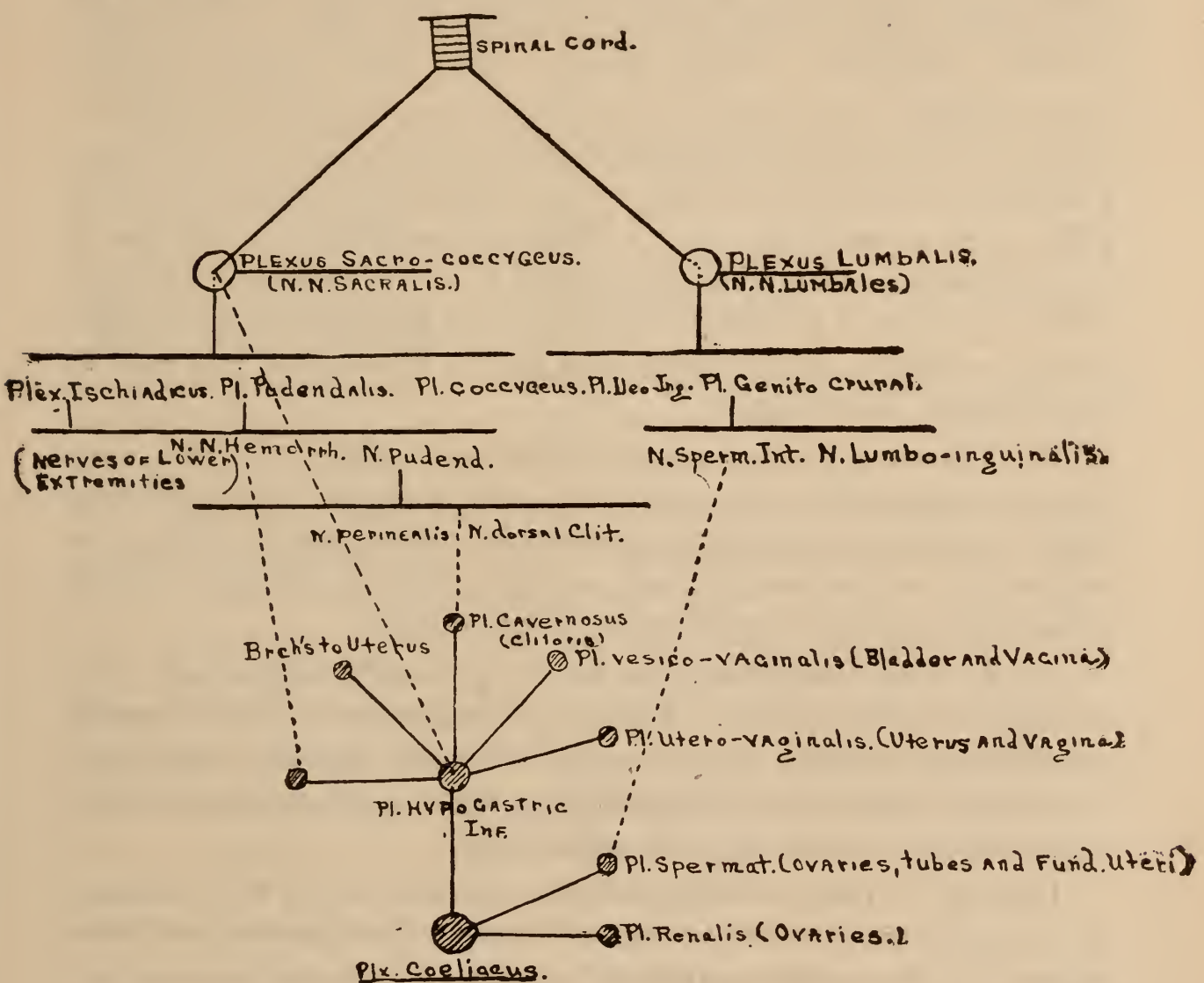
(*b*). The plexus vesico-vaginalis extends with the artery vesicalis to the upper portion of the bladder and the lower portion of the vagina.

(*c*). The plexus cavernosus, from which extend branches through the triangular ligament with the pudenda communis, and reach the clitoris and ramify in the corpora cavernosa. It has an intimate inosculation with the dorsal nerve of the clitoris which arises from the spinal plexus pudendalis.

(*d*). According to Frankenhauser (*Die Nerven der Gabarmutter*, Jena, 1876), nerves extend direct to the uterus.

(*e*). The plexus hemorrhoidalis, which has hemorrhoidal inosculations with the spinal hemorrhoidal nerve which arises from the plexus pudendalis.

These communications may be better understood by the following diagram.



The dotted lines indicate the combinations.

From this description it is definitely shown that there is an anatomical relation between the female genitals and the nervous system, and it would seem that there must be, at least in some measure, a communication between certain physiological functions and diseases of the female genitals and the nervous system; and also, therefore, to some diseases of the nervous system.

Physiological Relation.

The physiological relations of the female genital organs to the nervous system are particularly and clearly to be noticed at the epochs of normal menstruation, at the menopause, and in sexual excitement.

(*a*). Preceding and mostly during the early hours of the normal menstrual period in the greater number of civilized women of the present day there may be said to be present a typical symptomatic nervous exhaustion. These women suffer from general malaise and weakness, not relieved by physical rest, from dull headache, vertigo, cold extremities alternating with flushes, due to vasomotor weakness, and from palpitation of the heart, from irritability, loss of will power, amounting even to hysterical outbreaks, complicating in some cases. All of these, associated with the common menstrual reflexes, present a picture similar in extent, though shorter in duration, to ordinary neurasthenia, and which Winschied has seen fit to call acute neurasthenia.

(*b*). Likewise, at the normal climacteric many of these same nervous phenomena exist, and for a much greater length of time (until the nervous system recuperates from the induced reflex neurasthenia); and again, it may be said there is present nervous exhaustion, though very often of aberrant type.

(*c*). In sexual excitement we have a generally explosively overwrought nervous system. There is tremulousness, dilated pupils, weakness in the back and loins, and when this function passes near or over the border line of satisfaction, there is a momentary irritable weakness—a true nervous exhaustion.

Having, in the preceding sections, shown in the first instance the intimate anatomical relations between the female generative organs and the cerebro-spinal and vasomotor nervous systems, and in the second instance a very definite physiological relation between these same systems, as especially manifested at the epochs of (1) menstruation, (2) the climacteric, and (3) in sexual excitement, we now wish to consider in detail that which we are seeking, namely, the diseases of the generative organs, which we feel are strong etiological factors in the development and continuance of not a few cases of symptomatic neurasthenia, and secondly, of some cases of essential neurasthenia.

From our observations and studies, as far as they have gone, we feel convinced that certain lesions or diseases of the female generative organs, especially where there is a predisposition to nervous exhaustion, can produce what may be called a gynecological symptomatic neurasthenia; and besides, if this gynecological disease as the primary etiological factor is unrelieved, and is prolonged through perhaps months or years, the patient becomes permanently neurasthenic. She has developed a symptomatic neurasthenia, which may not be recognized as such, and therefore is classed as an essential case.

This same state of affairs may be compared to some of the remote and persisting headaches primarily due to eye strain and not relieved by accurate eye treatment.

As said in the early part of this paper too, there have been many contradictions as to any influence diseases of the female genitals have upon the nervous system.

We believe that the underlying causes of neurasthenia may be considered to be a primary predisposition in these cases, hereditary or acquired; possibly some undeveloped condition of the nervous system in many instances; and this is particularly seen in women. That this predisposition is often hereditary is probable in many instances, but that it is certainly also acquired there is no doubt. The predisposed patients as said, and usually women, are those most frequently observed. They give a history, for example, of having always been nervous, puberty has developed late, and many have had chlorosis; many of these women suffer from celibacy, in others the marriage relation is unsatisfactory, either from impotence or sterility. In many, celibacy itself seems to be an inducing cause of the neurotic predisposition. A factor in a very few of these cases is the presence of undeveloped uterus and ovaries.

On the other hand, many women have not the above detailed conditions. This class of cases have apparently been normal women until some well defined, exciting cause brings on neurasthenia. It is also true that many healthy women develop neurasthenia solely through some acute, exciting, exhausting cause or disease, producing in them extreme nervous irritation, and thus sequent nervous exhaustion.

Besides our above consideration of the causes of neurasthenia, it is acknowledged that overwork, nervous irritation, worry, trauma,

sexual excess, fright, etc., are the common causes of nerve exhaustion.

These should be considered here in detail, with the view of pointing out reasons for their producing neurasthenia, and to show that certain generative organ disturbances may similarly irritate and exhaust, and may, therefore, be prominently placed in this category. Thus alone can we hope to be *au courant* of the status of affairs. We should consider *seriatim* here how these causes act in other instances of neurasthenia.

Overwork produces histo-chemic loss in all cells of the body, just as normal work and living do to a less degree. But in overwork it seems reasonable that the central neurons (the dynamo of the complicated human machine) are especially overtaxed, metabolites are thrown off in excess, cause secondary irritation, and the already weakened neurons still further depreciate resistive power by their lack of energizing influence. The fire is dampened. Normal functionation is therefore wanting, and if prolonged and depending much upon the predisposition to weakness of nerve protoplasm, with this primary cause, does neurasthenia sooner or later develop. One of us has found marked indications of vacillation of the uric acid group excretion in neurasthenia, which seems reasonable to be brought about by the combination of events just described.*

Any sort of exhaustion, general or local, may cause neurasthenia, and in the study of this complex, every cause is to be diligently sought for. Sexual excess is, to our minds, a potent cause of nerve exhaustion. Sexual weakness is, however, not always properly interpreted in a given case of neurasthenia, for in many cases it is the result of neurasthenia—a spinal center exhaustion prominent.

Irritation is a potent cause of nervous exhaustion, by constantly overtaxing the central neurons, as is well seen in eye strain, due to astigmatism or loss of muscle balance, in persistent tinnitus aurium, violent neuralgia of long duration, continued nasal irritations, and the like. Post traumatic nervousness as seen by the surgeon is but an acute neurasthenia.

The reason for the so-called sexual neurasthenia being (besides the real sexual condition being due to sexual exhaustion from

* The Rôle of Uric Acid in Neurasthenia, etc.—An Expression of Disturbed Metabolism—Virginia Med. Semi-Monthly, June 27, '97.

overuse of the sexual organs) more commonly given expression to in the male, is that his sexual apparatus is largely external to the body, where the physical conditions of atony or irritable weakness and disease are more manifest to him, and the mind reacting upon these abnormalities sooner produces the most aggravated cases of neurasthenia; and this mental influence added is quickly followed by hypochondriasis, known to exist more in male cases. In female cases of neurasthenia they are not so frequently associated with sexual perversions, for the opposite reason of hidden generative organs, hence the lack of the same morbid mental influence. The naturally more irritable nervous system in the female, however, accounts for the greater predisposition to acquire neurasthenia in women in the sum total; but for the reasons given male neurasthenics are yet often the most persistent cases.

Fright in a less explainable fashion must produce loss of cell structure, and in addition may cause irritable neurons: hence tachycardia, overfunctionation of all organs, and final neurasthenia.

Worry must act in the same yet more insidious way.

Traumatism certainly is an exciting cause of some of the most persistent neurasthenias, especially of the so-called spinal type, one in which spinal symptoms predominate.

Injury to the back no doubt causes excitability of spinal centers, overwork of organs and structures supplied by them, and a final reflex irritability extending to the entire cerebro-spinal system, and especially to the sympathetic system; and this may occur in a previously robust individual as well as more frequently in the predisposed person.

Among these co-related causes it is to be seen, therefore, that irritation, as well as overwork, worry, etc., is a most potent factor in the production of nerve exhaustion from all sources. Granting this to be true, there is no doubt in our minds that certain gynecological diseases are capable of producing widespread irritation, considering the direct anatomical and physiological relations between the nervous system and the generative organs cited. This irritation must be even more pronounced and more actively causative of nervous exhaustion than is seen in such conditions as eye strain, which is acknowledged to be causative.

Thus it may be said with confidence that neurasthenia from any of the exciting causes given, is due to excessive nerve cell waste.

Toxines are of course agents which must produce neurasthenia in many instances.

If we study certain lesions of the genitals, not looking upon them as a simple mechanical injury or mere inflammatory process, but recognizing the great importance of these organs, their great influence upon the whole human economy, their great power of reproduction, their anatomical and pathological relations to the general nervous system, their special and intricate development; and pathologically, the peculiarities of the diseases of these organs which we must conclude differ in many respects from pathological changes found in any other part of the body; also the fact that pathologists of the present day know little in comparison of the etiological factors which produce these lesions, particularly those lesions of the ovaries; it seems to us that lesions of the genital organs may be especially causative in the development of general nervous phenomena, and that a careful study of certain lesions of the genitals is of paramount importance for the understanding of the frequent development of nervous exhaustion in this class of patients.

We know that certain gross pathological lesions, such as fibroid tumors and carcinoma uteri, and often extensive inflammatory changes of the Fallopian tubes and ovaries, are unassociated with any corresponding nervous phenomena; yet this is also true of gross pathological lesions occurring in other parts of the body, which are seldom productive of neurasthenia. Why it is that these gross pathological lesions, surely producing a form of widespread irritation, are not so frequently followed by nerve exhaustion, seems impossible to explain; yet these gross lesions may perhaps destroy the paths of conduction to the central nervous system, while less pronounced lesions apparently, simply keep up an exhausting irritation.

What then are these gynecological diseases that seem to cause nervous irritation and exhaustion? Probably the most frequent and prominent of these diseases is that of retro-displacement of the uterus, associated or unassociated with some diseases of the body of the uterus or cervix uteri, or injury to the latter. Such cases are frequently seen and treated by every gynecologist, and the symptoms of which these women complain are so definite and characteristic in each individual case, that we cannot go astray in

their determination. They complain of sacral backache, parietal and occipital headache, depression, general nervousness, nausea, often palpitation of the heart, and all the symptoms that we could but consider neurasthenic. In retro-displacement of the uterus, according to Winschied, there is dragging upon the ligaments, which he believes is a source of irritation. Besides this, such uteri are often found enlarged or congested, either from subinvolution resulting from the displacement, or change in the blood vessel supply. With such displacement, particularly those cases associated with injuries to the cervix uteri (married women), there is often associated some form of infection of the endometrium and myometrium (particularly gonorrhœal infection). Such infection thus persisting without associated gross disease of the adnexa, seems to us not to be a small factor in the production of continued irritation. But those cases unassociated with infection seem usually sufficient to produce the necessary irritation and symptoms described. We recognize the fact that this abnormality may not cause symptoms in every case, but it certainly does in the very great majority, and that within limits it is relieved by the operation of ventro-suspension. This operation we have certainly seen followed by complete cure in by far the greater number of cases coming under observation, and there can be no doubt of the efficacy of this treatment.

Another class of cases are those of laceration of the cervix uteri, which may be said to produce somewhat similar symptoms in a large number of women. Here again there occurs an even more markedly pronounced pathological change. Such a cervix may undergo extensive inflammatory hyperplasia, associated with more or less similar change in the uterine body. There occurs a pronounced inflammation and resultant cicatrization of much of the cervical tissue. There is abundant excretion, and here again does result a high degree of irritation which, continuing for months and years, must certainly influence the general health. Again, such cases in the majority of instances are absolutely relieved by the repair of the injury.

Injuries to the pelvic floor with or without separation of the sphincter ani muscle, if sufficiently extensive may produce pathological change, not only of the vaginal outlet, but are causative of changes in the internal genitals. Again here we know there occurs

continued irritation and the development of the nervous symptoms described. An instance which particularly demonstrates the influance of such an injury is shown in the case of a woman who sustained the injury at childbirth of bilateral laceration of the levator ani muscle and associated separation of the sphincter ani muscle, causing incontinence of feces. This woman for eighteen years was a typical neurasthenic, a chronic invalid, unable even to attend to her household duties. Two years ago this injury was repaired, and within three months she stated to her physician that she felt herself a new woman, and is now fully able to and is doing the work of a housewife on a farm.

Still another class of cases which are rarely seen, but nevertheless very important, are those of sclero-cystic degenerative oöphoritis. This disease, though insufficiently understood, and, as far as our experience goes, not producing symptoms in the majority of cases when of average degree, yet when extreme, particularly as noticed in one instance, it was the exciting cause of a most persisting and pronounced neurasthenia. The woman was a patient 37 years of age, an old maid. She had been treated by Dr. John K. Mitchell on several occasions by the "rest" treatment, but without improvement. Associated with the neurasthenia there was a most aggravated dysmenorrhœa. Thorough vaginal examination found the uterus in good position, but the ovaries were found definitely small, hardened and tender. The rest treatment having been faithfully given a thorough trial, the dysmenorrhœa being so prominent a symptom, and with the *positive* associated change in the ovaries, it was thought advisable as a last resort to perform the operation of oöphorectomy. This was done by Prof. Penrose about three years ago. For a year this patient suffered more or less from the induced menopause, but since has been perfectly well. The pathological examination of the ovaries in this case showed the oöphoron completely destroyed and converted into sclerotic tissue, and ovulation had apparently ceased. It can be but concluded that the nerve irritation and exhaustion in this case resulted from this change in the ovaries. Celibacy here was probably the inducing cause of the disease of the ovaries and thus of the neurasthenia. Another case under similar conditions, however, was followed by no improvement.

These lesions cited, though not representing all which may

cause sufficient irritation to exhaust the nervous system, are those most frequently seen.

A strong point in the relief of these cases, the efficacy of gynecological treatment, is the technique of operation. If an injury to the cervix uteri is repaired without removing the cicatricial tissue, or is otherwise improperly performed, the source of irritation will continue, and the patient be unrelieved. Another factor in such a case is the selection of the proper operation (trachelorrhaphy or amputation) for the best results. If the pelvic floor in the operation of perineorrhaphy is not properly restored, we cannot expect a relief of symptoms. In the operation of oöphorectomy, to our minds, the extensive constriction of large masses of tissue in the ovarian stump results in tension or dragging upon nerve tissue, subsequent pain and discomfort; an unnecessary amount of tissue is strangulated, and such procedures are often productive in keeping up the nerve irritation. It should be the object of the surgeon to include as small an amount of tissue as possible in his ligature, and thus avoid such sequela. The question of aseptic technique in the prevention of such abnormalities is of paramount importance. The abdominal scar should, we believe, be as small and unnoticeable as possible. If such technique is followed, we conclude the post-operative sequela, said to be so often complained of, will be far less frequent, and even very rare.

We do not claim that the gynecological diseases heretofore described are always causative in the development of a neurasthenia. We know that even those which, in a given case, may be associated with the most pronounced neurasthenia, may, in another instance, be found in a woman who is nervously healthy. Also, as before indicated, the removal of the gynecological causative lesion is not always followed by a cure of the neurasthenia, for the nerve exhaustion may be so far advanced that the patient has become apparently permanently neurasthenic. Again, it must be recognized that in women suffering with associated gynecological disease and neurasthenia, the primary and exciting cause of the neurasthenia can be independent of the gynecological disease. In such latter cases we only insist that the gynecological disease may be, and usually is, a factor in the keeping up of the neurasthenia. Furthermore, we do not solicit the belief that symptoms pointing to a disease of the female generative organs, without definite path-

ological lesions of these parts, are indications of any cause of neurasthenia resident in the pelvis, or for any gynecological operation or treatment whatever. . No matter how strongly the symptoms of which the patients complain may point to ovarian or to uterine disease, unless this disease is definitely demonstrable by a thorough pelvic examination, no operation whatever is indicated.† The treatment of hystero-epilepsy, epilepsy, and the various forms of insanity by the operation of oöphorectomy, without demonstrable pathological lesions of the female generative organs, we are convinced has never been followed by any permanent good, and is therefore not justifiable. In the cases we have observed, and those to be found in the literature, the operation of oöphorectomy has been followed by a more or less temporary relief, and even such are likely the result of operation *per se*—a passing mental influence.

It will thus be seen that many cases of neurasthenia under our subject, as just considered, are relieved or cured by gynecological treatment, but this does not imply that nervous treatment should not be used to its fullest extent alone, and in coöperation with gynecological treatment in the properly selected cases.

Thus, operation alone may cure a symptomatic neurasthenia of gynecological etiology; or where the neurasthenia is aggravated by the gynecological disease, relief may at once be obtained by gynecological treatment.

In other cases, where the nervous exhaustion is still further advanced, approaching chronicity, and the patient, as is usual, is physically able to withstand operation, it is advisable to first remove the gynecological cause, then to follow by "rest" or "partial rest" treatment—in the more severe cases, by thorough rest treatment; in the less pronounced cases, by modified rest treatment.

In the persisting chronic cases of symptomatic neurasthenia, apparently essential, but due again to or aggravated by gynecological disease, from the fact that the woman is often in so feeble a condition when coming to our hands for relief, it is still advisable to first resort to full "rest" treatment, and all other known measures used in systematic treatment of bad cases of *essential* neurasthenia, and when partial recuperation has thus been brought about,

† Influences of such disorders as laceration of the cervix uteri upon the nervous system are much less after the climacteric is fully established, i. e., when generative organ function has ceased.

the gynecological condition should then be relieved by gynecological treatment.

By these combined therapeutic measures in acute and chronic symptomatic neurasthenias, *both* associated with gynecological disease, we shall more surely obtain relief and cure in the vast majority of cases; whereas, any single method of treatment will pretty certainly fall far short of cure.

Lack of recognition, therefore, of gynecological disease on the one side by the neurologist, or on the other side lack of appreciation by the gynecologist of the strong influence of the rest treatment in these cases (cause and effect), seem to us to be the stumbling-block in the care of such cases, in which there is manifest association of two great factors in the causation of one of the most serious maladies in women.

From the foregoing study we think we are justified in the conclusion that a large number of cases of neurasthenia in women are induced by lesions or abnormalities of the female genital tract as described, but that neurasthenia may occur independent of, and be associated with gynecological disease.

We also wish to emphasize the importance of the determination of a distinct gynecological lesion, although the patient may complain of gynecological symptoms pointing to pelvic disease, before concluding that the neurasthenia is pelvic in origin. Where no disease is formed, gynecological treatment, particularly operative, is strongly contraindicated.

Furthermore, we wish to lay stress upon the importance and influence of the rest treatment carried out in its fullest details in many of these same cases, where, as said, the neurasthenia has been shown to be of gynecological origin.

Descent and Variations of the (Lepra) Bacillus.—Ashmead (*St. Louis Med. & Surg. Jour.*, July, 1898) thinks that "at the origin of bacillary things, there was only one bacillus, and all the various microbes we find in activity at present are only variations of a common progeny. Many of these variations have produced their diseases and have died out with their pathological products. New diseases have developed and will continue to develop under changed conditions and with changed bacilli."

MASTOIDITIS.*

BY ELLET ORRIN SISSON, M.D.

Professor of Anatomy and Director of the Microscopical and Bacteriological Laboratories, College of Physicians and Surgeons, Keokuk, Iowa.

It is not within the scope of this paper to touch upon all the phases of this disease. To do so would necessitate the presentation of an exhaustive paper, for the existent literature on this subject is indeed vast and teems with clinical data that is of vital importance, and that would have to be quoted in order to do the subject justice. Therefore, the author will confine himself to two divisions only, namely, the etiology and pathology of mastoiditis, hoping to bring out in the former some points which have recently been advanced, and which have not received free discussion at the hands of aural surgeons.

As regards the etiology of mastoiditis, statistics go to show that the most common cause of an acute inflammation in this region is an extension of a similar process from the middle ear, the primary lesion being either acute or chronic in character. Primary mastoiditis, although uncommon, is occasionally seen, and may follow an exposure to cold or a traumatism, or may be a manifestation of a tubercular or specific diathesis. The last named condition is probably the most common cause of a primary mastoid inflammation, a gummatous deposit occurring and subsequently breaking down in the characteristic manner. Inflammatory conditions within the meatus may also extend to the mastoid by contiguity. A simple circumscribed inflammation may produce this result, especially when located in the posterior wall of the canal. Diffuse external otitis may cause a similar condition. But the most common cause is chronic suppurative inflammation of the middle ear. The middle ear, according to Dr. Lannois,† is a closed antiseptic cavity. This was proven by a number of experiments on dogs and rabbits conducted by him where the brain and the superior wall of the tympanum were removed and cultures made of the mucus of

* Read before the Western Ophthalmological, Otological, Laryngological and Rhinological Association, Chicago, April, 1898.

† Revue Internationale de Rhin. d'Otol. et de Laryng., July 18, 1896.

the middle ear in ordinary bouillon, and the results were negative. Into this antiseptic cavity microbes make their way, most commonly by direct extension of the disease by the way of the Eustachian tube from the throat, or according to Merritt,‡ through the circulation, and sepsis occurring in the capillaries of the mucosa of the middle ear, producing an abscess which ruptures into the cavity. Taking it for granted then that the large majority of cases of mastoiditis are the direct result of chronic purulent otitis media, a condition which is so frequent, why is not mastoiditis produced in proportion to this frequency? Dr. Forus of Madrid asked this question in an oral communication to the first Spanish Oto-Rhino-Laryngological Congress, and has undertaken to answer it from an anatomical standpoint. As the result of his observations on fresh temporal bones, he has come to the conclusion that the process is due to the anatomical disposition of this region, which is quite different from the description given it by recognized authorities. He says the tympanic cavity is not an exclusive cavity. This cavity, which, during embryonic fœtal life, is filled with a gelatinous conjunctival tissue, is emptied soon after birth, but the process of reabsorption gives rise to various fibro-mucous folds. The mucosa consists of a thin fibrous tunica propria, which in places resembles the reticulum of adenoid tissue, and includes leucocytes. According to Piersol,§ connected with the trabeculæ of the mucosa, peculiar oval bodies are encountered, which are composed of an axial band and concentric lamellæ of connective tissue. These bodies are normal, but probably not constant constituents of the middle ear. These fibro-mucous folds have been partially described by some with the name of ligaments, but according to Forus are nothing more or less than a species of epithelium, which covers and protects all and each of the structures within the tympanum. The process of reabsorption referred to gives origin to a system of cavities which divide the tympanic cavity into various compartments. Of these, he says, there are two of great anatomo-pathological importance, namely, the antero-inferior, and the postero-superior. Blake and Bryant of Boston give similar divisions, and Dench, ‖ in his work on "Diseases of the Ear," says that the horizontal folds

‡ Occidental Med. Times, May, 1897.

§ Piersol, Normal Histology, page 380.

‖ Dench, Diseases of the Ear, page 26.

may completely shut off the vault of the tympanum from the atrium. Forus calls the antero-inferior compartment the tubal compartment of the tympanum, and the postero-superior the attico-mastoid compartment. In describing this septum, he says:

"The septum, which separates these compartments, and which encloses in its thickness the chain of ossicles, originates above the Eustachian tube, and extends along its anterior part in the form of a tent from the external to the internal wall of the tympanic cavity. At the external surface it surrounds the anterior muscle of the malleus, the existence of which I have been able to prove on the cadaver, although none of the modern anatomists make mention of said muscle. Now, from this point, which is the antero-external limit, it runs toward the internal wall, protecting the chorda tympani, from whence it leaves the anterior pocket of Von Troelstch, forming a very acute angle with the tendon of the referred anterior muscle of the malleus. The membranous expansion, before reaching the malleus, receives the reflex tendon of the internal muscle of the same, and from this point it gives off various expansions. Some, the internal, go to form all those ligaments which unite the hammer and its neck to its immediate regions, and which have been described by some anatomists. Another continues up to the long process of the incus along the postero-internal portion, constituting a sort of diaphragm, which has been described by Urbantschitsch, and which reaches the posterior part of the promontory, above the round window, continuing along the stapes, the latter being surrounded by it up to its base and extends up to the posterior wall to protect the tendon of the stapedius muscle. Other posterior expansions give rise to the posterior ligaments of the ossicular chain."

In this way, the tympanic cavity, as we have seen, is completely divided into two great compartments and other smaller ones. The antero-inferior compartment, comprising anteriorly the Eustachian tube, through which it is continuous with the rhino-pharyngeal cavity, and comprising that portion of the tympanic cavity which is in relation with the tympanum proper, and is limited posteriorly by the inferior portion of the posterior wall of the tympanic cavity, and by the septum already mentioned, it, then, has in its posterior cavity the opening for the round window, and as a proximal limit, we have the oval window enclosed in the thickness of the

referred septum. All these constitute the antero-inferior chamber. Above the septum already described, is the other compartment, made up of the attic, antrum, and mastoid cells.

He says that after due deliberation he believes that this is a normal division of the tympanic cavity and serves to explain various facts, namely, that the otitis which we call catarrhal are not panotitic, but otitis of the tubal chamber—that is, that as we consider some otitis as being limited to Prussack's pocket or pouch, we should likewise bear in mind that all the catarrhal otitis, by tubal infection, remain in their propagation limited to the antero-inferior or tubal chamber, and that they require some time before destruction of the septum described permits the process to invade the mastoid region.

By experiments on the fresh cadaver, he proved the truth of his statements. He attached the canula of an irrigator to the Eustachian tube, after removing the superior wall of the mastoid antrum, and injected water, which did not flow out when the level of the fluid was in favor of the irrigator. Allowing the deposit to ascend to four or six centimeters, the water did not flow out, although its level made one suppose that the fluid most likely passed into the mastoid region. Then to assure himself that there was no tubal obstruction, he made a paracentesis, when the fluid was seen to make its exit with abundance through the tympanic wound. Shortly afterward, when the external auditory canal was tamponed, the water did not come out through the mastoid region, but on lifting the vessel still higher, he observed that when it was 24, 26, and in one instance 30 centimeters above the level of the water over the preparation, the septum described ruptured, and then the water made its exit in an abundant stream through the mastoid antrum, as occurred before through the external auditory canal.

In judging the true merits of this experiment, he truly says: "We must not lose sight of the fact of the loss of resistance which takes place in the organic tissues after death."

These anatomical observations are certainly valuable. As to the theory advanced that it is due to them that mastoiditis is rare in relation with cases of suppurative otitis, only careful observation of such cases will prove, but it is indeed curious that from the intimate relations which exist between the mastoid cells and the tympanum, the latter cavity may be the seat of a purulent

inflammation for years without producing a similar condition within the mastoid.

Passing to the pathology of mastoiditis, we note that a chronic purulent otitis media causes certain changes in the mastoid. These changes may be of a hypertrophic or a degenerative character. In the former, we have an increase in the vascularity of the parts resulting in the thickening of the membrane lining the cells. These changes continuing lead to a deposit of new osseous tissue which, in the most marked cases, converts the entire process into a mass of compact bone of ivory-like consistence, and obliterates the cells completely. Where the changes are of a degenerative nature, a local necrosis generally results. If this affects a large area, a sequestrum is formed which is either exfoliated spontaneously or demands operative measures for its removal. If the destruction takes place over a limited area, the disintegrated tissue is discharged as pus; when moderate in amount, and a free exit is afforded through the external auditory canal, the copious discharge from the canal may be the sole evidence of the involvement of the mastoid cells. If, however, drainage is not free, symptoms of pus retention are manifested. The results that may be produced by the presence of this infectious material within the bony cavity, are a copious otorrhœa as mentioned, and if drainage through the canal is impeded, the fluid seeking an exit evacuates itself spontaneously where the least resistance is offered. The evacuation may take place through the external mastoid cortex, either behind the ear or in the external meatus or through the cortex in the digastric fossa. It may even take place through the roof of the antrum or of the tympanic vault into the middle cranial fossa, or it may empty into the posterior cranial fossa by way of the groove, lodging in the lateral sinus. The invasion of the cranial cavity leads to inflammation of the meninges, which may be diffused or circumscribed, in the former leading to leptomeningitis, while in the latter an epidural abscess is formed, the pathology of which it is not necessary to dwell upon.

The intracranial contents may be involved without internal rupture; the free anastomosis between the blood vessels of the dura and the pericranium furnishes an avenue through which the infectious material may be carried to them. And as the result we may have, in addition to the two conditions already mentioned, a

thrombosis of the lateral sinus or an abscess within the brain substance. Where rupture takes place upon the external surface of the mastoid, it is commonly supposed that all serious danger of involvement of the intracranial contents is at an end, although the abscess may not be immediately evacuated by incision of the overlying soft parts. Dench points out the fact that this is an error, particularly in the case of children. Here, as we know, the sutural lines between the various portions of the temporal bone are not completely ossified, and when the external surface of the temporal bone is bathed in pus, infection through the sutural line or through the substance of the squama itself is by no means impossible. Dench* has reported one case of this character in a child, and one in an adult, while several other instances may be found in otological literature. Again, because of the non-development of the parts in children, we may have the pus beneath the integument in the post aural region without perforation through the cortex. In these young subjects, a collection of fluid within the tympanic vaults frequently makes its way along the superior wall of the canal, gaining exit from the cavity through the Rivinian segment by dissecting the soft parts away from the bone in this location. Perforation of the cortex on the anterior surface—that is, through the posterior wall of the bony meatus—may occur occasionally. Spontaneous evacuation here is probably due to the fact, that in the particular case the external cortex is thicker, while along the posterior aspect of the canal the pneumatic cavities are well developed and thin-walled. Again, we must remember that the mastoid cells may extend as high as within half an inch of the temporo-parietal suture. Anteriorly, the pneumatic cells extend forward over the external auditory canal. Hyrtle, according to the authority of Schwartze, found three skulls (among three hundred which he examined for that purpose) in which the pneumatic cells extended even into the occipital bone, and Buck† reports a case in which there was a large abscess in the body of the mastoid process where, in trephining the skull, he found pus between the outer and inner tables of the occipital bone, a short distance back of the temporo-occipital suture, and in the light of Hyrtle's discovery, it was

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*Archives of Otology, vol. 21, page 253.

†Buck, Manual of Diseases of the Ear, page 301.

equally probable that pus found at this remote spot was really lying in pneumatic spaces which stood in direct communication with those immediately surrounding the abscess.

Now as to the conclusions to be drawn from these observations of the etiology and pathology of mastoiditis:

1. As previously stated, the large per cent. of cases of mastoiditis are the direct result of chronic purulent otitis media, but that they are not produced in proportion to the frequency of the latter, and therefore there must be some existent condition or conditions that exert an influence in this direction.

2. That in the light of anatomical observations the pathological conditions are not necessarily the same in any two cases, and that such observations tend to more firmly establish the fact, that an inflammation of the mastoid process is a condition fraught with great danger to life.

HEART MURMURS.

CLINICAL LECTURE

Delivered at the Hospital College of Medicine,

BY FRANK C. WILSON, M.D.

Professor of Diseases of the Chest and Physical Diagnosis in the Hospital College of Medicine, etc., Louisville, Ky.

As there are four orifices in the heart's structure connecting the four chambers and large vessels, each one of these openings curtained by valves, we may have conditions which will give rise to two distinct murmurs at each one of these orifices. Obstruction, either by a constriction or by the deposit of inflammatory exudation, possibly a little excrescence about the margin of any one of these orifices, would interfere with the flow of blood through that orifice in the forward direction, and would give rise to a murmur. On the other hand, if the valves, which in their perfect apposition allow no regurgitation, have been (as a result of contraction from old inflammatory material) warped and twisted out of shape, they fail, upon closure, to prevent regurgitation of the blood, and a murmur is produced by that regurgitated current. That gives us two murmurs at each one of the orifices—one by obstruction, the

other by regurgitation. We will now illustrate how these are differentiated, and how to discover where the murmur is produced, and what the condition is which gives rise to it.

A heart murmur is a soft, rather blowing sound, like the rushing of a current of liquid, which clearly distinguishes it from the natural sounds of the heart, the first of which is coincident with the contraction of the heart, while the second sound occurs when the heart dilates.

The following facts must be kept in mind: That at the time the first sound of the heart occurs, at the time you feel the pulse beat at the wrist, the ventricles are in the act of contracting, expelling the contents from their cavities into the large blood vessels, forward through the aortic and pulmonary arteries, and exactly at the same time the mitral and tricuspid orifices are in the act of closing; so you can see any murmur that occurs at that time, at the time you feel the pulse beat, at the time the ventricle is in the act of contracting, would necessarily be produced, either as the blood passes out through the aortic and pulmonary orifices by obstruction at either of these points, or by regurgitation allowed because of leaking of the mitral valve, or leaking at the tricuspid valve. There are four conditions, then, by which a sound would be produced exactly at the same time, at the time you feel the pulse beat at the wrist.

Now, which one of the four conditions is it that gives rise to the murmur which we hear? Fortunately for us, the sounds produced at either one of these four orifices, which are very close together so that a small circle would include all four, the mitral sounds have been carried downward and to the left; the sounds made at the tricuspid orifice have been carried downward and to the right; the aortic sounds have been carried to the right around the edge of the sternum; the pulmonary sounds have been carried upward and toward the left.

After ascertaining, then, that the sound is made at the time the heart contracts, knowing that it is made at one of these four orifices, all you have to do is to ascertain at which one of these points it is heard most distinctly. If near the apex of the heart, in what is known as the mitral area, you know it is made at the mitral valve, and being made at this time you know it must be a mitral regurgitant murmur, that the valve is in the act of closing at that

time. If it is heard most distinctly near the ensiform cartilage, then you know it is made at the tricuspid orifice, and as the valve is in the act of closing at that time, of course it is a tricuspid regurgitant murmur. If you hear it at the right edge of the sternum most distinctly, you know the blood is going forward through the orifice at that time, and it is therefore obstructed. If, on the other hand, it is heard most distinctly at the left edge of the sternum, between the second and third costal cartilages, you know it is made at the pulmonary orifice, the blood is going forward through that orifice into the pulmonary artery, and it is therefore a pulmonary obstructive murmur.

These, you see, are all the data necessary to enable you to say not only where the sound is produced, but what the condition is that produces the sound, whether it is obstruction, or whether it is regurgitation. Then you may still further confirm your conclusion by tracing the sound in the direction in which it may be carried by the current.

In the case of the aortic obstructive sound, heard at the right edge of the sternum, between the second and third costal cartilages, as the current is going up into the arch of the aorta, it carries the sound with it up along the sternum, and you can sometimes distinctly trace it into the arch of the aorta and up into the carotids; still further, also into the descending aorta. You can see that the sound will be carried by the current until it finally would exhaust itself, and as the current is going into the arch of the aorta, and into the descending aorta, this sound can be heard on the back or up near the shoulder just behind the beginning of the descending arch of the aorta, and as you pass downward along the left side of the vertebræ over the arch of the aorta the sound will get weaker, and finally you will lose it entirely.

In the case of the mitral regurgitant murmur, the sound is carried by the current, as it passes from the ventricle below into the auricle above, upward and backward. You put your ear near the apex of the heart, then follow the sound toward the axilla, in the direction of the current; it is still heard along the back between the fifth and eighth dorsal vertebræ, because the current impinges against the posterior wall of the left auricle, which is right against the back. Now, the aortic sound decreases as you gradually move your ear from above downward, but the mitral regurgitant murmur

is heard posteriorly between the fifth and eighth dorsal vertebræ, is most distinct low down, and gets less distinct as you go upward, because you are following in the direction of the current. The sound diminishes progressively from the point of production until it becomes entirely lost.

To reiterate, there is a marked contrast between the two sounds posteriorly. The aortic obstructive sound is heard most distinctly just over the beginning of the descending aorta, and gets less as you go downward. The mitral sound is heard most distinctly low down, and gets less distinct as you go upward.

The tricuspid regurgitant sound is not as easily heard on the back as the mitral sound. While the same conditions exist, the sound is carried by the current passing upward through the tricuspid orifice from the ventricle to the auricle, the heart is right in front of the vertebral column, you have the thick bodies of the vertebræ, which are not very good conductors of sound, between the point of production and the surface, and when you put your ear upon the back, you find the sound cut off, either completely or in a great measure. In case of the mitral regurgitant murmur, you trace it upward and toward the left. In case of the tricuspid murmur, you trace it upward and toward the right, and when you have a very loud murmur you may possibly hear it posteriorly.

In case of the pulmonary obstructive murmur, which is heard at the same time, when the heart contracts, you hear that most distinctly at the left edge of the sternum. If you will recall your anatomical knowledge of the direction of the pulmonary artery, you will know that it passes upward and backward, and toward the left shoulder, so that this sound will be carried in that direction, and it soon gets very deep behind the lung structure so you cannot trace it more than a few inches. This confirms you in your conclusion that the sound is produced at the pulmonary orifice.

We have now given you four distinct sounds, all produced at the same time, all produced at the time the pulse beat is felt at the wrist, at the time the heart is contracting, which you can distinguish from each other by close attention to these differential points.

There are obstructive conditions which exist at the mitral and tricuspid orifices, although most writers claim that murmurs produced at these orifices are because of insufficiency, that it is impossible to detect mitral obstructive murmurs, and insist that they are

never produced. But I am satisfied that I have made post mortem examinations scores of times in which there existed pathological conditions, such as a buttonhole mitral orifice, produced by agglutination of the edges of the mitral valves until a little slit was left between the two; I have seen conditions where the whole margin of the orifice was studded with little inflammatory exudation and fibrinous excrescences that could not possibly have avoided producing sufficient obstruction to the flow of blood through the orifice to have caused a murmur. The fact that the murmur was never detected does not disprove its existence. A murmur must have been produced in those cases, although it may not have been detected during the lifetime of the patients. We seldom meet with mitral obstructive murmurs, and the same thing may be said of the tricuspid orifice, although the conditions have not been found so frequently on that side.

How is it that we can distinguish a mitral obstructive murmur? Let us see what the heart is doing at the time that murmur is produced. Where there exists obstruction sufficient to produce a murmur, the blood is in the act of passing from the auricle above down through these orifices to the ventricle below; the ventricle has emptied itself and prepared to fill again for the succeeding contraction, and it begins to dilate, and the blood coming in from the lungs through the pulmonary veins, passes first into the auricle, then in a gentle current down through this orifice into the ventricle until that chamber is nearly filled. Normally during all this time the force of the current is not sufficiently marked to produce a murmur; but if there should occur any condition which will increase the force, pressure and rapidity of the current of blood in its passage down through the orifice, then we will have a sound produced. Now, that does occur just at the beginning of the contraction of the heart, not in the ventricle but in the auricle; we know the first contraction of the heart occurs in the auricle above. By that contraction, just before the ventricular contraction occurs, the contents of the auricle are simply dumped down, as it were, from the auricle to the ventricle through this (mitral) orifice, and *then it is* that this sound is produced, and then only. By a gentle flow in the earlier part of the filling of the ventricle no sound is produced; but just at the time the auricle empties itself into the ventricle the sound is produced, hence it occurs just before the ventricular contraction,

just before you would feel the pulse beat at the wrist. I repeat and emphasize it, that the murmur must be immediately before the pulse beat, by the minutest fractional part of a second, and it continues until cut off short at the time you feel the pulse beat.

This is supposing that the mitral valves fit properly, allowing no regurgitation; then with this obstruction existing, this mitral obstructive murmur would be heard just immediately before the pulse beat, running up to the time the left ventricle contracts; there could be no regurgitant murmur, and this obstructive murmur would cease just at the time the valves close, because at the time the ventricle contracts the passage of blood from the auricle above into the ventricle below ceases.

In this way you can distinguish a mitral obstructive murmur from other sounds produced in connection with the heart's action. The same reasoning exactly would apply to a tricuspid obstructive murmur. As a matter of fact, however, I do not suppose you will ever meet with an uncomplicated mitral obstructive murmur. Where a pathological condition exists that produces obstruction at that orifice, we get in ninety-nine cases out of a hundred the history also of insufficiency of the mitral valves, resulting also in regurgitation; and this is probably the reason many authorities claim that it is impossible to detect a mitral obstructive murmur; for you can see where you have a mitral obstructive murmur and also a mitral regurgitant murmur, if the mitral valves are defective, then you have two sounds occurring in immediate succession, one is merged into the other, and it is more than likely you will receive the impression that there is but a single murmur, which you will call a mitral regurgitant. I have no doubt that in a great many instances where there is a mitral regurgitant murmur, there may also be detected, if the case is closely examined and the sounds differentiated, a mitral obstructive murmur. If you can hear any portion of the murmur as you listen, before you can feel the pulse beat, you can safely say there is a mitral obstructive murmur.

There are two other conditions which may give rise to murmurs, and these conditions exist at the aortic and pulmonary orifices, and are due to incompetency of the valves. These valves close at the time the heart dilates, as the heart is beginning to fill. As soon as the heart empties itself, it begins to again fill with blood and to dilate, and these valves act to prevent backward flow of blood from

the large arteries into its cavities. Suppose these valves are incompetent, suppose they have been warped or twisted by inflammatory action, suppose they have been ruptured as occurs sometimes from excessive exertion, as a very heavy lift, the enormous pressure upon the blood current rupturing the aortic valve, these valves will then allow a regurgitation or backward flow of the blood current every time they close. You can thus see that the murmur would occur just at the time of the second sound of the heart, after the pulse beat, as the heart begins to dilate—when these valves close.

You can differentiate between these two murmurs (the aortic and pulmonary) by observing the point at which they are heard most distinctly. If the sound is heard at the right edge of the sternum, it is produced at the aortic valve, provided it is produced just at the time when the heart is dilating; if heard at the left edge of the sternum at this time, then it is produced at the pulmonary orifice. And you can confirm this, not so clearly and distinctly as in the case of the other murmurs, by the direction in which the sound can be traced. Where the blood is going in the forward direction, we can trace the sound with the direction of the current; but in case of the regurgitant current at the aortic orifice, the blood is going backward, under and behind the sternum, toward the ventricle to the left; and the same is true in regard to the pulmonary orifice—the blood being regurgitated is going backward and to the right toward the ventricle, and is heard even as far as the ensiform cartilage. To come to the case before us:

> This patient, Mrs. B., aged 46 years, general health fairly good, comes to us because of what she calls "palpitation of the heart," difficulty in getting her breath, etc. A physical examination shows her lungs to be normal. She complains of a slight cough, but this is probably due to bronchitis, and has no connection with her other troubles. We find there is a cardiac murmur which is heard most distinctly near the apex, in the mitral area; it is heard at the time the pulse beat is felt at the wrist, therefore it must be a mitral regurgitant murmur. It cannot be anything else. We can trace it upward and backward toward the axilla; we can also hear it posteriorly between the fifth and eighth dorsal vertebræ.

In view of what has been said, let us see if we can determine whether any part of this murmur is heard just before the pulse beat is felt at the wrist; in other words, let us see if there is any obstruction at the mitral orifice. We put the finger on the radial artery and see if any portion of the murmur can be heard before the pulse beat is felt. This test is negative, therefore we are forced

to the conclusion that this is a simple mitral regurgitant murmur, that it is not complicated by any mitral obstruction.

Now we might have an aortic obstructive murmur which would occur at the same time this sound is heard, and we must, therefore, differentiate between these two. If it were an aortic obstructive murmur, the sound would be radiated; it would be heard most distinctly at the right edge of the sternum, and from that point could be traced up into the neck, into the carotid arteries. A mitral regurgitant murmur, while it may be heard in the same situation, would not be carried up into the neck.

In this case, we conclude that there is no aortic regurgitant murmur, as we can hear the aortic valve close without producing any abnormal sound.

INCISION vs. RAPID DILATATION FOR STENOSIS OF THE CERVICAL CANAL.

BY J. H. REILLY, M.D.
MEMPHIS.

I know that I am not in harmony with authorities in claiming that better results can be obtained in the treatment of constriction of the cervical canal for dysmenorrhœa and sterility than by the more modern procedure—rapid dilatation, as advocated by Goodell and other eminent gynecologists—but after an experience in the treatment of forty cases, my statistics force me to take the stand that I have taken.

When cases of this nature first came under my direct observation for treatment, I resorted to the rapid dilatation operation, as a means to produce a rapid cure.

I assisted at the operation a great many times during my service as hospital interne, and whilst I looked upon the operation as a barbarous procedure, it evidently accomplished the dilatation to such a marked degree that I reconciled myself to the idea that the end justified the means.

That the canal could contract again to the same degree as before operation, appeared at that time, to me, an impossibility, but it was not my privilege to watch the progress and termination of these cases after leaving the hospital, and not hearing of any unsat-

isfactory results, I concluded that the results must have been very gratifying to the operator, as well as to the patient.

After entering practice, when cases of this nature presented themselves to me, the first operation that suggested itself was that of rapid dilatation, and after meeting with cases where, after dilatation to the maximum extent suggested by enthusiastic advocates of the operation, and carrying out the after-treatment in the manner approved by them, the contraction was as marked as before the operation, if not more so, I concluded that the operation does not permanently overcome the contraction of the cervical canal.

The cases in which we are called upon to do this operation, generally, are dysmenorrhœa and sterility. When I say dysmenorrhœa and sterility, I do not mean to say that all cases of painful menstruation are due to a contraction of the cervical canal, or that all cases of sterility are due to this condition; I have only reference to those cases where every other cause is excluded, and a stenosed condition of the cervical canal exists.

When called upon to treat a case of sterility, I think we are justified in operating, if this condition is found to be present, although a history of dysmenorrhœa is not associated with the case—a condition not at all uncommon. In fact, the only successful case of sterility I treated by rapid dilatation was in a patient who presented herself with the following history:

> She had been married eight years; was 24 years of age when married; had never had any serious sickness; she was very anxious to have children, and stated that if this was due to any condition that could be corrected, she wanted to have it done. She menstruated regularly, and never had severe pains immedlately before or during period. There was no ulceration around the external os. On passing the sound, it met with considerable resistance at the internal os, and was forcibly passed through. The uterus was found to be in its normal position. The only condition found to which her sterility could be attributed, was this apparent constriction at the internal os. I dilated this rapidly under ether, passed a sound at short intervals for a month, after which I did not see her for four or five months, when I was called to treat her for some of the disagreeable symptoms of pregnancy, and in a year from the time of operation I delivered her of a twelve-pound boy.

Of the forty cases I have operated on, ten were for sterility, and thirty for dysmenorrhœa.

The first ten cases that came under my observation for dysmenorrhœa, I treated by rapid dilatation, and of these but four were permanently relieved. The condition of six others, after periods

varying from three months to a year, was as bad, and in two cases worse, than before operation. They underwent a secondary operation by incision, and after a period of from one to two years, I have yet to hear of an unfavorable result.

Of the remaining thirty cases operated on by incision, permanent relief followed in every instance. Within the last six months I have operated on three cases, which I have not included in my statistics, as I do not regard a case permanently relieved until it has passed a period of one year without a recurrence of the trouble.

Of the ten cases operated upon for sterility, six underwent the rapid dilatation operation. This operation proved effectual in but one case, and that as I reported. After one year's time, the contraction being as marked as before the dilatation, they underwent a secondary operation by incision. Two of these have since borne children, and one other is well advanced in pregnancy, and in one the constriction is as marked as before operation. The other patient passed from under my observation about six months after the operation; she was not pregnant at that time.

On four patients I have done the operation by incision during the past year; two are now pregnant—one two months after operation, and the other four months. Two on whom I operated within the last three months are still under my observation.

The constriction in every case that came under my observation has been at the internal os. In not a single case have I met with any resistance with the ordinary sound, until I came to the internal os, and in every instance the constriction has been so marked that an ordinary probe could not be passed unless considerable force was used.

What we accomplish in dilatation is a paralyzation of the sphincter muscle surrounding the internal os, but it is only a temporary paralysis, and will gradually resume its function in the same manner as the sphincter ani after forcible dilatation for diseases peculiar to the rectum. The great tendency of this muscle to contract after dilatation is not at all surprising.

Very true, the muscular fibers that are ruptured by the dilatation lose their power of contractility, but it is almost an impossibility to rupture them all with the instruments devised for rapid dilatation, and I doubt whether we will rupture any of the fibers if only carried to the extent advocated by some authors.

When we reflect and consider how soon after a labor, where the muscle encircling the internal os is put upon the stretch to an extent many times as great as can be accomplished by any of the dilating instruments now in use, and how soon after it resumes its power of contractility, it is inconsistent to expect to deprive the same muscle of its functions under the force of the instruments devised for that purpose.

The operation by incision is not attended with any more danger than that by rapid dilatation. A number of instruments, called hysterotomes or metrotomes, have been devised to do the cutting. The objection to these instruments is, that they do not incise deep enough. In my hands, the long, blunt-pointed bistoury has accomplished the desired result without any trouble. Pelvic inflammation is a contra-indication for the operation; in fact, it is essential that any inflammatory trouble peculiar to the pelvis should not exist to have the operation successful. If the operation is done and any inflammatory trouble exists, it is certain not to be a success, and the inflammatory condition is aggravated.

This does not apply to endometritis; to the contrary, when this disease exists, as it does very often as a consequence of the stenosed condition of the internal os, the cure of it is facilitated by the opening of the os.

The operation should be done as soon after a menstrual period as possible. This will give the tissues sufficient time before the next period to completely heal over. If the tissues are in an inflamed condition at the subsequent period, contraction is very apt to follow. For this reason a patient should not be operated on close on a period.

A mild cathartic is given the night before operation. If this does not prove effectual by time of operation, the bowels are unloaded by a rectal enema. A vaginal douche is given the morning of the operation. This leaves the parts in a proper condition for the operation. The various steps in the operation are as follow:

The patient is anesthetized and placed on the table, and a bivalve speculum introduced, or a Sims', whichever is preferable to the operator.

The cervix is grasped by the forceps tenaculum and held in a fixed position.

A dilator is passed to open the os up to a degree large enough

for the bistoury to enter. After passing the bistoury, the next step is to make the incisions. I resort to the crucial incision, one anterior and posterior, and two lateral incisions.

A blunt-pointed, double-edged bistoury has been devised to simplify the operation by avoiding turning the instrument. I use the single-edged one, and do not experience any difficulty in turning it from one wall to the other.

The depth of the incision is governed by the experience of the operator.

The danger of a deep incision lies in the severing of the circular artery. As near as I can determine, the depth of the incision I usually make is about three-eighths ($\frac{3}{8}$) of an inch. The hemorrhage is controlled by compression with absorbent cotton passed into the canal on an applicator.

Occasionally I have found it necessary to resort to applications of the persulphate of iron to control the bleeding. A douche of hot water is again given, and sterilized gauze introduced. Rarely is any after-treatment necessary.

Southern Express Building.

THE RELATION BETWEEN UTERINE CONDITIONS AND AFFECTIONS OF THE EYE.*

BY W. ZENTMAYER, M.D.

PHILADELPHIA.

Assistant Surgeon to Wills Eye Hospital; Ophthalmic Surgeon to St. Mary's Hospital.

We can readily appreciate the etiological relationship existing between the organs under consideration if we regard their anatomy and physiology. The eye, with its transparent media, comparatively extensive sentient sheet, with end arteries, its excessively vascular choroidal coat, its delicate accommodative mechanism and its complicated muscular balance, and the uterus (and parametrium), richly supplied with blood vessels, nerves and lymphatics, with its important relation to the two epochs in life affecting so markedly the whole economy, the periodic changes, upon the normal course of which depends the proper functioning of the entire organism.

In considering the relation of diseased conditions existing sim-

* Read before the Northwestern Medical Society of Philadelphia.

ultaneously in two organs, it must not be forgotten that they may both be expressions of a common cause, or that they may be only coincident affections. Further, the cause may be but secondary, the primary factor being a local condition or an hereditary constitutional affection. Such instances are numerous, and perhaps nowhere else in the body, unless it be in the brain, is the baneful effect of syphilis, gout and rheumatism so productive of irreparable damage. Sometimes the phenomena are ocular while the lesion is cerebral. The ocular trouble may be produced mechanically, as in retinitis albuminurica and intraocular hemorrhage by obstruction to the circulation; reflexly, as in retinal irritation; and metastatically, as in suppurative choroiditis.

We will consider first physiological processes.

Puberty. At this period of life the eye is most frequently affected by disease, but conditions which may be directly attributable to puberty are uncommon. Dor, however, mentions a case of bilateral vitreous hemorrhage preceding the first menstrual epoch.

Menopause. Pathological conditions similar to those which are excited by amenorrhœa and dysmenorrhœa occur at this time of life. Samelsohn has seen amblyopia progressing to absolute blindness, lasting some days, but terminating in recovery. Hemorrhagic retinitis may also occur.

Pregnancy, Parturition and Childbed. Discoloration of the skin of the lids, phlyctenular disease of the conjunctiva and cornea, accommodative and muscular asthenopia, and many of the reflex ocular symptoms excited by diseases of the uterus are present when the uterus is gravid—contraction of the visual field, lachrymation, weakness of accommodation and of the extraocular muscles, in some cases amounting to slight paralysis. In a case seen by Blodding, convergent strabismus, first of one eye and then of both, was the invariable premonition of pregnancy. Nieden reports excessive secretion from the lachrymal gland in a primipara, continuing from the third month. Ocular symptoms as a part of a general hysterical state may be present. Albuminuric retinitis, as the result of mechanical nephritis or true parenchymatous nephritis, is of frequent occurrence and may be present at almost any stage of the pregnancy, but usually appears late. The symptoms may be so grave as to call for the induction of premature labor, but unfortunately this does not always restore vision, as previously existing

conditions or complications may have resulted in changes which remain after the fatty degenerated cellular and connective tissue elements of the retina have been absorbed. This is exemplified in the case of Lotz, where albuminuric retinitis had caused detachment of the retina, and notwithstanding the successful induction of premature labor the blindness was permanent, although the retina had become replaced. The eyes were myopic and showed marked choroido-retinitis. Detachment of the retina may occur independently of retinitis or of albuminuria, from sub-retinal hemorrhage or effusion of serum. At times the hemorrhage takes place into the vitreous, and is absorbed without serious results to vision.

Parturition and the Post-partum State. Temporary blindness may accompany the syncope, which not frequently complicates dystochia. Several cases are on record of complete or nearly complete blindness coming on after labor, and lasting from days to months. Hysterical blindness may also occur. The great strain put upon the blood vessels during labor pains often ruptures their walls, and we find extravasations taking place into nearly every tissue of the eye, and no doubt many of the cases of blindness recorded are from hemorrhage, either into the sheath of the optic nerve, or into the brain. Emboli, both septic and aseptic, are carried into the eye either from the uterus or from thrombosis, the former causing purulent choroiditis and panophthalmitis with subsequent shrinking of the globe, the latter embolism of the central artery of the retina. Septic choroiditis is of most frequent occurrence during the second and third weeks of childbed, and is not rarely bilateral. Perhaps fortunately, the prognosis for life in these cases is very grave. Chevallereau reports a case of hemianopsia after severe hemorrhage from the severing of an adherent placenta. The operation was followed by fever and partial aphasia, lasting six weeks, when the defect in vision showed itself and still persisted at the end of two years. The same author records a similar disturbance of vision subsequent to hemorrhage from accidental abortion. The author believes the lesion in both instances to have been a thrombus in the cortical visual center.

Menstruation. The effect of normal menstruation upon the normal eye is to produce a transient peripheral contraction of the field of vision with a diminution of color perception. This reaches

its height upon the third or fourth day, and the degree is dependent upon the quantity of blood lost. Dark circles about the eyes, and conjunctival œdema are commonly seen. Vicarious mestruation from the caruncle and from the conjunctiva has been observed. In this connection may be mentioned the case recorded by Plimpton of ciliary neuralgia and photophobia, relieved by vicarious menstruation from the bowels. The origin of cases of iritis after cataract extraction, inflammation of the lachrymal duct, slight exophthalmos with hemorrhage into the sheath of the optic nerve and papillitis has been ascribed to menstruation.

When the ocular disease assumes a periodicity, or when relapse or aggravation occurs coincident with the menstrual epoch, the relationship is assured. Such cases are both of frequent occurrence and of varied types, including iritis, herpetic keratitis, herpes of the lid, and oculo-motor paralysis. One of the most interesting cases of periodically occurring affections is that of Christianson. A woman 33 years of age lost her sight a few hours before each period, but recovered it before the appearance of the flow. At first no changes were observed in the fundus, but later progressive atrophy set in. In Myers' case, the menstrual flow was ushered in by amaurosis which, after lasting several hours, disappeared as suddenly as it had come. There were no symptoms of cerebral congestion. According to Vance, in nervous diseases the fundus of the eye becomes congested with the advent of the periods.

Disorders of Menstruation. The increase of blood pressure, incident to sudden suppression of the menses from catching cold, emotion, or other cause, may lead to hemorrhage into the sheath of the optic nerve, retina, anterior chamber, or conjunctiva. Sudden suppression may also cause blepharospasm, optic neuritis and consecutive atrophy. Herpetic disease of the cornea and conjunctiva has been seen in connection with disturbed menstruation. A case of interstitial keratitis, with periodic aggravations, and one of pannus keratitis, which disappeared when the menses were established, has been observed by Mooren. Schies-Gemuseus saw a case of iritis follow the same course. Three cases of retro-bulbar neuritis, with central scotoma, all occurring in young girls with dysmenorrhœa, have been seen by Uhthoff. Metrorrhagia, or severe hemorrhage from any cause, may give rise to amblyopia. The degree of impairment of sight will be dependent more upon the frequency

of the attacks than upon the amount of blood lost. The ophthalmoscopic changes are those of retinitis, with pallor of the discs and reduction in the size of the blood vessels.

Pelvic Cellulitis. In the variety of cellulitis to which Freund gave the name atrophic chronic parametritis, we have a most distressing group of reflex ocular symptoms, periorbital and ocular pain, smarting and burning of the conjunctiva and edges of the lids, asthenopia, fatigue of the eyes, and dread of light. These symptoms are persistent, and usually either but little improved or distinctly aggravated by the wearing of glasses for the correction of any existing refracture or muscular anomaly. The condition is met with most commonly in elderly spinsters, women who have not borne children and in widows. When occurring in married women, it is said to be ameliorated during pregnancy.

Disease of the Ovaries is supposed to be frequently the cause of retinal hyperesthesia and œdema.

1423 Walnut Street.

CORRESPONDENCE.

I.
GYNECOLOGICAL NOTES FROM PARIS.

Editors Memphis Lancet:

Apostoli. As chance would have it I found myself first at the clinic of Apostoli, who has attained such worldwide celebrity by his successful application of electricity to gynecological therapeutics. Although his office is still at 5 Rue Moliere near the Avenue de l'Opera, he has removed his clinic from its former dingy surroundings, in the Rue du Jour, to a much larger and more suitable place at 15 Rue Montmartre. Since my last visit here twelve years ago his views have changed but little. Most of what I wrote in my letters from Paris at that time is still true. I was greatly interested to see his splendid outfit of instruments and apparatus, and the honest and painstaking manner in which the records of his cases are kept; and I could not but be impressed each time that I visited his magnificent waiting rooms by seeing them filled with the highest class of patients from so many different countries. His method must have some virtue in it to have stood the test of so many years.

At his clinic he has three salaried assistants constantly taking histories and giving treatment, so that now he has more than five thousand cases, all carefully, and many of them most minutely, recorded. His clinic costs him personally over three thousand dollars a year. Although he still uses the constant galvanic current for the symptomatic cure of fibroids, and the fine Faradic current for pelvic pain, he has added two other important elements to his institution. One, the static current, obtained from a Roltz machine; and the other, the Tesla current, of very high tension and high frequency. The static is given in the form of showers or sparks, while the Tesla current is applied as the patient is reclining on the sofa or sitting within a solenoid or cage, the current passing all around him. Want of space prevents me from describing these currents more fully, so I must be content with a summary of my observations:

1. Apostoli does not treat surgical cases with electricity. Each time that I attended his clinic, I saw case after case sent to the surgeon, because these cases had either disease of the appendages or cancer of the uterus, neither of which he claims to cure by electricity. He wishes it to be distinctly understood, therefore, that electricity is an ally and not a rival of surgical treatment.

2. If I had any doubt, which I have not, as to the great value of electricity as a diagnostic agent in gynecology, it would have been dissipated by what I saw at Apostoli's clinic. As the cases were brought before him, the assistants reported in several of them there was intolerance of even small doses of 40 or 50 milliamperes. Apostoli invited me to investigate them carefully with him, and by the aid of the clinical history and the physical examination, I would have suspected diseased appendages in some and cancer in others. With the intolerance of electricity added, Apostoli felt so certain of the diagnosis that he then and there sent them to the surgeon for operation. He was much interested in a case of my own, bearing upon the diagnostic value of electricity. A young woman, who had been treated by three physicians with electricity for a large fibroid tumor of the uterus, was rendered worse each time. Guided by Apostoli's advice, I suspected pus tubes, and on performing laparotomy, I found that what was thought to be a fibroid was a collection of four enormous abscesses of the two tubes and ovaries.

3. I saw demonstrated the important place occupied by the

electrical treatment of ovarian pain for which, so far, neither medicine nor surgery have proven very effective. And yet no other word than magical would express the effect of the *static* spark on tender ovaries. Cases which could not endure firm pressure on the ovarian region without crying out declared, after two or three minutes of application of the static sparks, that the same pressure caused them no discomfort whatever. Some of these patients were seen for the first time while I was there, and did not leave my sight for a moment, nor was a word spoken to them until the effect was produced; so that they did not know what was being done, nor what was the effect expected. I cannot say how long the relief lasted, but Apostoli assured me that many cases, even including those suffering from ovarian pain after removal of the ovaries, had been completely cured by this treatment, which he tells me has taken the place of the current from the long, fine Faradic coil.

Pozzi, with whom I had the pleasure of spending a morning at the Broca Hospital, is one of the most striking figures of the profession in Paris. Like our own Sir William Hingston, he is a Senator and a Knight (of the Legion of Honor), and he is also a full Professor of the University. He is a tremendous worker, his book on gynecology being one of the most complete that has ever appeared. I was always puzzled to know how he managed to find the time to write such a work, and on expressing my curiosity, he told me that he obtained leave of absence from the University and from the hospital, and taking many cases of notebooks and monographs with him, went to Montpellier, where he shut himself up like a hermit for two years, writing for fifteen hours a day. I saw him do an abdominal hysterectomy, during which, in order to give himself more room to work, he first split open the fundus and enucleated a large, hard fibroid by screwing a specially made corkscrew into it. The remainder of the operation was exceedingly simple, because relieved of its load, the uterus was easily lifted out, including the cervix, and the six arteries ligatured individually with catgut, and the peritoneum closed. As far as I could learn, vaginal hysterectomy is gradually being abandoned in France, where it had its greatest stronghold, and Howard Kelly's method of abdominal hysterectomy is gradually taking its place. Pozzi is getting the city council of Paris to build a one hundred thousand dollar operating theater and laparotomy pavilion. It will be without wood,

and of marble and cement throughout, so that each day it may be washed with a stream of bichloride solution with the hose.

Segond is next in seniority to Pozzi, and is about 48 years of age. He is a man of great force of character, and is making a marked impression on the progress of gynecology in France. He was a strong advocate of vaginal morcellement of the uterus for pus tubes, fibroid tumors and all conditions in which both tubes and ovaries had to be removed. While visiting America a year ago he performed this operation eleven times before large assemblages of gynecologists, and he did them so elegantly and quickly that he elicited the admiration of all who saw him operate. But though he came to show American surgeons what could be done with vaginal hysterectomy, they in turn showed him what they could do by the abdominal method, with the result that Segond became converted by those whom he came to convert, and ever since his return he has become so strong in his advocacy of Kelly's method as to carry all before him. They all, however, still remove the cervix, even when there is no suspicion of malignancy: their sole object being to obtain vaginal drainage, which they think is the strong point leading to their great success in the vaginal method. In this I think they are mistaken, as it adds very much to the time required for the operation, several whom I saw doing it taking more time to arrest the vaginal hemorrhage than was required for the ligation of the six arteries and the removal of the tumor. Moreover, I think it important to leave the *healthy* cervix to avoid shortening of the vagina, and as a rule there is so little to drain that it hardly justifies the opening of the vagina. Segond is a great admirer of everything American, and he told the large staff present that the finest hospital he had ever seen was the Royal Victoria at Montreal; and in his writings, which are very forcible and convincing in their style, he loses no opportunity of praising the skill of American gynecologists. I saw him doing an abdominal hysterectomy for cancer of the uterus, in which he also removed the upper part of the vagina which was affected; he had great difficulty in stopping the bleeding. He admitted on my inquiring, that his experience with hysterectomy for cancer was very discouraging; so I suppose they have the same difficulty to contend with in France as we have, namely, the cases come to us too late. The above case was at the Saltpetriere; the next was at the Bandeloqui,

where I saw him remove a papilloma of the ovary with secondary grafts on the peritoneum and ascites. After removing the disease he placed a drainage tube and gauze packing on account of the profuse oozing. He recognizes the fact that gauze packing keeps in secretions but does not drain them. The third case I saw Segond doing was at a private hospital kept by the nuns, where he removed one tube and ovary from a young lady; but he admitted that it did not give very satisfactory results, as he had often to operate on them again later.

Richelot, as far as I can learn, comes next to Segond. I saw him operating at the St. Louis Hospital, the dirtiest-looking old barracks, internally, that I have ever seen. As this was probably not his fault, I felt sorry for him. I called upon him at his elegant private house, 32 Rue Panthieure, and although he was crowded with patients, he received me most kindly, and made an appointment for the next day. Everything during the operation was rigorously aseptic, which of course is the principal thing, but any stranger seeing *only* that hospital would have a very bad opinion of French hospitals. I was glad that it happened to be a vaginal hysterectomy for disease of both appendages, pus tubes, for that is his forte. He performed the operation beautifully, in about the same time as we would take to remove them by the abdomen. They claim here that the uterus should always be removed when both ovaries are taken away. I also saw him perform a Schroeder operation, using a needle on a handle to pass the sutures. He did not, like Martin of Berlin, pass a preliminary suture on each side to control hemorrhage. At all the hospitals the feet and legs of the patients are bandaged up in a thick layer of cotton, well sterilized, an example worth following, as it helps to keep up the bodily temperature. To close the abdomen Segond used through and through silver wire; Bouilly through and through silkworm gut, and Pozzi, three layers, two of buried catgut, and one of superficial silkworm gut.

Doyen is said to be the equal of any, but he did not operate while I was in Paris.

Bouilly operates beautifully at the Cochin Hospital.

Tuffier is a rising man. My next letter will be from Berlin.

A. LAPTHORN SMITH, B.A., M.D., M.R.C.S., ENGLAND.
MONTREAL, CANADA.

II.

SOME LEADING EUROPEAN GYNECOLOGISTS AND THEIR WORK.

My last letter described very briefly what I saw in Paris; this letter will speak of some well-known gynecologists in Florence, Vienna, Prague, Dresden and Berlin.

Pertalozza of Florence. Having heard that he was doing a large amount of good work, I left the beaten track and went to Florence to see him. He received me most courteously and invited me to come next morning, which was Sunday, at 7 o'clock, to see some operations. He has an immense clinic, being in sole charge of forty gynecological and eighty obstetrical beds. Ten of the latter are reserved for isolating infected cases coming from the outside. Among his own cases he has had no death from sepsis since several years. The first operation was abdominal hysterectomy for multiple fibroids in a woman who had also prolapse of the vagina; he left a small portion of the cervix, to which he afterward attached the upper part of both broad ligaments, in order to draw up the vagina. He used isolated silk ligatures for the two ovarian and two uterine arteries, and he operated very quickly. The silk was prepared by first soaking it for twelve hours in ether to extract the fat and then sterilizing it in steam for two hours, after which it remains indefinitely in 2 per 1000 sublimated alcohol. As it appeared to be particularly good, I took down the address of the manufacturer, Bouti, Silk Manufacturer, Porta Rossa, Florence. He afterward removed a cervix which had been left after hysterectomy two years before and had now become cancerous. Some of the old silk ligatures were found encysted and calcified. He then took me over his hospital and showed me about twenty patients convalescing from laparotomy. I would strongly advise those who intend to visit gynecological clinics in Europe to spend a few days with this talented gentleman.

Schauta of Vienna. During my short stay I was unfortunate in not seeing him operating, but this was amply compensated for by seeing his first assistant Dr. Schmidt perform a vaginal operation for removal of the uterus and appendages for pyosalpinx. He

opened the anterior vaginal fornix first and then the posterior, sewing the peritoneum carefully to the vaginal edge in order to avoid hemorrhage, after which he placed just six silk ligatures on the broad ligaments, completely controlling the bleeding, of which there was almost none. By cutting off the lower half of the uterus he obtained more room for the difficult task of detaching and bringing down the densely adherent appendages.

I spent another profitable morning with

Dr. Gustave Kollischer, second assistant to Professor Schauta, who is quite celebrated for his work on the bladder. He catheterized the ureters and gave me a fine view of the bladder with the catheter in the ureter by means of his cystoscope, which is a modification of Nitze's and Brennier's. I was so pleased with its easy working after seeing it used on several cases, that I procured one at Leiter's, instrument maker, Vienna. It has many advantages over examination by speculum, the principal one being that it does not require any dilatation, nor external light. All you have to do is to draw off the urine, fill the bladder with clear warm water, introduce the cystoscope and touch the button for connecting the current from a little five-cell battery, when the whole of the bladder is beautifully lighted up, and the smallest foreign body as well as the openings of the ureter can be easily seen. There is a small channel adjoining the optical apparatus through which the elastic bougie is passed, and can be guided into either ureter. He also showed me a beautiful little curette for removing granulations, and also little scissors for cutting off polypi, and forceps for seizing calculi. He told me that he had removed several wandering silk stitches from the bladder which had ulcerated into it after laparotomies and vaginal fixations.

Pawlik of Prague received me very kindly and put me in a good humor by mentioning many of my papers. Speaking of electricity he said he had employed Apostoli's method in a great many cases and with very good success in arresting hemorrhage, in diminishing the size of fibroids and in expelling some of them from the uterus, but he had given it up because he could not be sure of the result in any given case. He removed a large ovarian cyst by the abdomen, using catgut for ligature, and burning instead of cutting off the tumor in order to avoid adhesions to the bowel and also to lessen risk of sepsis. He closed the abdomen with two rows of buried

catgut and a third of superficial silk sutures. He prefers the abdominal route for fibroids and pus tubes. I saw them using 3 per cent. of ichthyol in glycerine in the out-patient department. Pawlik is a great linguist and speaks English, French and German perfectly, besides three other languages, but what he excels in is catheterizing the ureters. He showed me the instruments which he used twenty years ago in Vienna, where he told me the proceeding was employed for the first time and by him. His skill in using the ureteral catheter is wonderful; he seemed to introduce it into the bladder and up into the ureter with one gliding movement. No dilator; no endoscope; no artificial light; not even by sight, but merely by the sense of touch. I asked him to measure it (the catheter), and it was found to be thirty-two centimeters long. In a case of pyonephrosis he first injected 200 grammes of water to distend the bladder and then introduced the ureteral catheter and injected 130 centimeters of 1–3000 nitrate of silver solution, which he gradually increases after some days to 1–1000. Sometimes he uses sublimate solution. The patient told him when the kidney was distended, and on removing the rubber pipe the solution spurted out of the catheter. On making intermittent pressure on the kidney the liquid could be made to spurt out in jets. He also showed me the woman from whom he had removed the whole of the cancerous bladder.

Leopold of Dresden. As my train did not get in until 9:30 A.M. and I did not reach the hospital until 10, I was too late to see him operating, which he begins every morning at 7 o'clock. He is a firm believer in total extirpation of the uterus whenever both ovaries and tubes are severely diseased. He gave me his recent paper on the results of 67 such cases, with a mortality of 1½ per cent. Also another paper giving results of 100 cases of removal of the uterus by the vagina for myoma, with a mortality of 4 per cent.

Olshausen of Berlin. I studied under him ten years ago, and was pleased to see that he had not aged at all since then. He gave me a kind welcome, and invited me to an operation next morning at 8. When he has several operations, he commences sharp at 7, so one has to rise at 5:30 or 6 to be there on time. The case was a woman of 65, who had a bleeding polypus which, on removal and examination a few days before, was found to be cancerous. He opened the two pouches and sewed the peritoneum to the vag-

ina. He used nothing but catgut throughout, but he always ties three knots on the arterial ligatures. The ligaturing of the broad ligament was greatly facilitated by his having the best needle I have ever seen, known as Olshausen's "Unterbindungsnadel," and much superior to Deschamp's. As he trusted entirely to catgut, I asked him how it was prepared. 1st, soaked for six hours in sublimate water 1–1000; 2nd, the water is removed by soaking for twenty-four hours in sublimate alcohol 2–1000; 3rd, matured for several months in absolute alcohol, and used directly from that. After the operation, he took me over his wards and showed me a great many cases convalescing nicely from laparotomy. In the latter, he closes the abdominal wound with four layers of catgut in fat patients, or three in thin ones. He objects to through and through silkwormgut, for fear that it will lead pus into the peritoneum; although another operator (Landau) told me of a woman having died on the sixteenth day owing to being closed up by layers of catgut; the pus could not get out and so broke into the peritoneum, which would have escaped to the skin if she had been sewed up with through and through stitches. Olshausen dresses the abdominal wound with very little iodoform and a single little strip of gauze, over which collodion is painted so as to completely seal the wound, and this remains undisturbed for twelve days. I saw several of these first dressings removed, and they looked very well; the catgut was all absorbed, and the knots could be brushed off. As I thought that the buried catgut would cease to hold the wound after a few days, I asked him if he ever saw hernias. He replied that they would happen in spite of any method of suturing. I told him that I used silkwormgut and left it in a month. He does ventro-fixation by passing a silkwormgut stitch around each round ligament near the uterus, and fastening it to the abdominal fascia, and leaving it buried there. I saw him introducing a pessary and sending a woman away, who was brought for operation with a freely movable, retroverted uterus, which he first replaced. Next day he did abdominal section for an ovarian tumor with twisted pedicle, and another case of pus tubes and ovaries also by the abdomen, taking great care to wall up the bowels with quantities of sterilized gauze.

No one here flushes the abdomen with water, and they have also abandoned constant irrigation in vaginal work, using instead

great numbers of little gauze sponges, which are thrown away as fast as used. Olshausen did not remove the uterus, but carefully closed all bleeding points and left it in. On the walls of the operating room he has two cards:

NOLI TANGERE and FAVETE LINGUIS

He told me he was going to get another one with "not to expectorate" in Latin. He showed me two cases of eclampsia, of which he has about sixty a year, sometimes as many as six at a time. As is well known, he is the first authority in Germany on obstetrics, and is accoucheur to the Empress.

Martin of Berlin still stands at the top of the gynecological ladder in Germany. He operates at his private hospital every day at 12, which is a great boon for visitors, as it enables us to see two or even three other operators each day, and he did two or three a day during the whole week. The first was a vaginal hysterectomy for cancer of the cervix, using catgut for the broad ligaments. It would have been a very difficult case for any one else, but was quite easy for him. The second case was vaginal fixation in a lady who had been wearing a pessary for retroversion for many years without being cured. He is the quickest operator I have ever seen, only taking ten minutes for this pretty operation. The same running catgut suture went through vagina and peritoneum, and the fixation stitch was of catgut. The third case was one of cystic ovaries, in which he opened the abdomen by the vagina, brought out the ovaries, found them diseased, removed four-fifths of them, and carefully sewed up the remainder with catgut, and put them back again. After closing the vaginal incision, he did an anterior and posterior colporrhaphy on the same patient. Next day he did vaginal hysterectomy for a small fibroid, which was difficult on account of the senile atresia. I made particular inquiry whether he had ever known of a case of post-operative hemorrhage, and he replied not for several years, because they tied it tighter. Next day he did two vaginal fixations for retroversion with fixation. He was greatly aided by an instrument I have never seen before, consisting of a forceps, the posterior blade of which was a stout uterine sound, and which, being introduced, was used as a lever to lift the uterus forward while he was opening the vesico-vaginal plica or fold. He then detached the appendages and removed them, and after carefully closing the torn surface on the back of the fundus,

he attached the uterus at the level of the internal os to the vaginal wound. The bad results of pregnancy following the operation in the early cases were due to fastening the top of the fundus to the vagina, the uterus thus being held upside down. In another case he brought out the appendages, emptied some cysts in the ovaries and replaced them, and then did vaginal fixation. The next day I saw him cauterizing an inoperable cancer with a very pretty electrical cautery, made by Hirshman, 15 Johannis Strasse, Berlin. It consisted of a sharp porcelain tip, heated by platinum wire, and was supplied with current from a small storage battery not larger than a cubic foot. It was quite portable, and only cost $60, including a cystoscope and a head lamp for operating on dark days.

Landau of Berlin is one of the leading teachers there. He is assisted by his brother, and he has a large and handsome private establishment in the Phillip Strasse, near the Charité. The pathological department is looked after by Dr. Pick, who speaks English fluently. He has a beautiful method of preparing specimens, which are first hardened in 4 per cent. of formaline, and then stretched on wire netting. They have the specimens of every case, both macroscopical and microscopical, from whence they have removed anything, even down to curettings and vaginal discharges, systematically indexed for ready reference. I have never seen anything like it anywhere. Dr. Pick gives a course of microscopy to physicians. I saw Landau remove large double ovarian tumors, which Dr. Pick took sections from and mounted and stained while the operation was going on, and showed us in a few moments carcinoma. Landau used silk to tie the pedicles, and through and through silver wire for the abdomen. Another day I saw him remove pus tubes by the vagina in a case of retroversion with fixation. He split the uterus up the middle with his scissors, and after digging out the pus tubes he put two or three clamps on the broad ligament on each side and cut them off. I was very favorably impressed with this method in this case. But immediately afterward he did another patient in whom the pus tubes were much higher up in the pelvis, and he had tremendous difficulty in getting them out by the vagina, and I felt sure that he could have done it much easier by the abdomen.

Duhrssen of Berlin seems by common consent to be acknowledged as the ablest among the younger men of note. He is not much over

40, but his large private hospital at 25 Schiffbausdamm, filled with important cases and maintained at his own expense, testify to his ability and energy. He received me most courteously, and patiently answered my very numerous questions. He showed me a patient from whom he had removed the uterus by the vagina for hemorrhage due to hemophilia, which interested me particularly because three years before she had come to him for the same thing, and he had employed *Sneguiroff's* steam cure, which cooked the mucous membrane so well that she did not menstruate at all for three years. He kindly set it going for me. It is a little boiler, fitted with a thermometer so as not to let it get hotter than 120° centig., and the steam is conveyed into the uterus by means of a double catheter during a quarter to four minutes. The cervix must first be thoroughly dilated, and there must be a rubber tube over the steam pipe so as not to burn the cervix, which would cause a stricture. He is an enthusiast for vaginal laparotomy, and claims to be the inventor of vaginal fixation for retroversion, he having published his first fifteen cases before any one else published one. I was very much opposed to the operation before coming here, but since I have seen Duhrssen doing three in an hour, as well as several other operators doing it very quickly, and after hearing its manifest advantages, I have been most favorably impressed with what I have seen of it. He opens into the peritoneal cavity in two minutes or less, hooks out the ovaries, tubes and uterus, destroys all cysts by ignipuncture, replaces them, passes a silkwormgut ligature through vagina, into peritoneum, uterus, and out again on other side through peritoneum and vagina. This is left untied until he has sewed up the opening in the peritoneum with a running catgut and the vagina with another row of catgut, after which the fixation ligature is tied. I made many inquiries about Alexander's operation, but nobody here does it. When I told Olshausen that I could generally find the round muscle with my eyes shut, he invited me to do the operation on a case, but on examination her uterus was found to be fixed, and therefore unsuitable. Next day I saw Duhrssen remove the vermiform appendix and double pus tubes by the abdomen, which he does in about 25 per cent., and by the vagina in 75 per cent. Next day he removed a pair of very angry gonorrhœal pus tubes by the vagina. There was recent peritonitis. As she was a young woman, he left the uterus and

one ovary. This was a very nice case, as he did it very quickly and all outside of the vagina.

Mackenrodt of Berlin is one of the coming great men, if not already one. He appears to be under forty years of age and is a fine operator. I saw him doing a Cæsarean section and subsequent total extirpation of the uterus for cancer. The child, about eight months, was taken out alive and did well. There was hardly any bleeding. As soon as the child was removed through the opening in the uterus he put in two ligatures on each side and a few temporary ones on the uterus side and cut between them until he came to the uterine arteries, which he tied. He then separated the bladder and freed the uterus until he had it and the vagina like one tube free almost to the vulva. He felt for the large cervix and cut the vagina below it, not with a knife, but with a large cherry red electrical cautery, his object being to prevent it from infecting the peritoneum. The current marked 17 amperes and was obtained from the street. The asepsis of himself and assistants was most thorough, spending twenty minutes by the clock in disinfecting their hands. He and most of the doctors here stand on the patient's left, so as to use their right hands.

Koblanok of Berlin is Olshausen's first assistant, whom I saw removing a large fibroid by the abdomen. The case was an easy one but he did it beautifully.

Gusserow, whom I was anxious to see, did not operate while I was in Berlin. Neither did Nagel, his assistant.

In closing my letter from Berlin I must truly say that I have seen more here in one day than I have ever seen in any other city, and I cannot speak too highly of the kindness with which I was received by one and all. Nearly every day I was up before 6 A.M. in order to get to Olshausen's by 7, and from there I went to Landau's, and from there to Duhrssen's or Mackenrodt's, and from there to Martin's, where I remained till nearly two, by which time I felt that I had seen enough for one day. As all these places are within a few minutes of each other, Berlin offers especial advantages for a post-graduate course. My next letter will speak of Sanger, Zweifel and Jacobs.

A. LAPTHORN SMITH, B.A., M.D., M.R.C.S., ENGLAND.
MONTREAL, CANADA.

THE

MEMPHIS LANCET.

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EDITORIALS.

THE OLD CITY HOSPITAL BUILDINGS.

The disposal of the old wooden and brick buildings formerly used by the city of Memphis as a charity hospital has been the subject of considerable discussion. While no one can assert that this brick or that plank will produce a certain disease, yet, in the light of our present knowledge of bacteriology, it is safe to say that the distribution of this old material about the city will be the cause of many illnesses. We have abundant proof that infectious diseases are due to microörganisms, and that spores of these organisms may remain latent for many years. Disregarding the possibility of measles, smallpox, scarlet fever, yellow fever or diphtheria as a class necessarily few in number, let us consider tuberculosis as a common and deadly type. We know that it is rarely transmitted by heredity or direct contact, yet when one member of a family is infected, a general invasion of the household frequently follows. It is because the afflicted person permits sputum or other discharges containing bacilli to dry and be disseminated through the house, lodging on the walls and furniture, or in the throats and lungs of those around. But the work of destruction does not cease with his immediate relatives and attendants. This family is decimated or moves away, and a new tenant, well and strong, takes the place.

The fatal germ still clings to the walls. All that is required is a period of lowered vitality, and a fresh victim is added to the list.

These are cold, hard facts, supported by statistics from many scientific searchers, some of whom report that, decade after decade successive occupants of certain houses have become infected. Surely there is not one of those old wards but have harbored many consumptives, and we have not sufficient confidence in the intelligence and tractability of the average hospital patient to believe that they have so disposed of all discharges as to leave the walls free of bacilli. Should these timbers, alive with germs, be used to construct shanties for negroes and indigent whites, susceptible as such people are by reason of unsanitary surroundings, these shanties will prove veritable hotbeds of disease. It does not make us less responsible, that such people are willing to run the risk of living in them; they are compelled to this by stern necessity; and it is our duty to guard them from the effects of their ignorance.

The city of Philadelphia sustained a damage suit because the water it supplied, by an accidental contamination of the main from a leaking sewer, spread typhoid fever. How much more just a claim would these poor victims have, if our city authorities wantonly expose them to disease?

It has been suggested that the material would not be used for homes, but only for fences and outhouses. Will every bidder be required to give proper guarantee that he will use his purchases only as directed by the city? But grant that their use will be confined to such purposes; domestic animals of various kinds will be housed and corraled in them. So that, while New York, Pennsylvania, and many other States are condemning dairies infected with tuberculosis, destroying the herd and buildings, we will be placed in the unique position of erecting structures all ready to transmit the malady to any animal that enters.

We have spent hundreds of thousands of dollars in advancing sanitation in Memphis. We are contemplating the expenditure of many more thousands for the perfection of our plans. Yet after making this vast outlay for the prevention of disease, there is thought of placing a choice collection of the most virulent organisms in spots where they can do the most harm. And all for the sake of a few hundred dollars. To an ordinary observer this would seem a "penny wise, pound foolish" policy indeed.

DR. WILLIAM PEPPER.

Dr. Wm. Pepper is dead. He died suddenly of angina pectoris on July 27th, while on a visit near San Francisco. Four members of the LANCET staff are graduates of the University of Pennsylvania, and partly for that reason, and partly on account of the prominence of this man of parts, we feel impelled to give his death more than a passing notice.

The one thing with which Dr. Pepper's name is intimately connected in the medical world, is his study of the bone marrow in pernicious anemia. But to laymen and medical men alike, his name was ever coupled with that of the school which owes so much to him.

The University of Pennsylvania was Dr. Pepper's idol. Though sustaining a large and laborious practice, which called him frequently from the city, a voluminous writer, and author of one of the first of the large "Systems of Medicine," Professor of Practice in the Medical Department, and Physician to the University Hospital, he long and capably filled the position of Provost of the University, and by his incessant labor, untiring zeal and liberal contributions of time, money and influence, he did more than any other one man to place this school in the high place it now holds among our great educational institutions. It was commonly said in Philadelphia that had Dr. Pepper adopted the law as a profession, he would have been President of the United States. A graceful speaker, a thoughtful writer, and an ardent student, he added to these the quality of "tact" in its highest development. It was said that he would never accept any renumeration from the University for his services as Professor and as Provost, and his resignition from the latter office was accompanied by a gift of $50,000 to the institution.

Death has dealt hardly with Pennsylvania. In a short time the flags on her towers have gone to half-mast for Leidy, Agnew, Goodell and Pepper. We hope this last vacancy will be as acceptably filled as have the other three. Brilliant, and ready, and graceful, and eloquent, must he be to wear worthily the mantle which is cast upon his shoulders by this appointment.

THE DISPOSAL OF GARBAGE.

Garbage has been the stumblingblock in the disposal of urban refuse. Dumped in rivers, it clogs harbors and pollutes the water. Fed to stock, it quickly breeds disease. It cannot be spread out on the ground without serious menace to health and comfort. So that we are reduced to the problem of finding a rapid method of destruction. Crematories were failures for many years, owing to the incomplete combustion obtained.

A scheme of utilizing the oils and inorganic residue has been tried, but in spite of some savings from the sale of the products, it has been found expensive. A system of cremation, recently introduced in Memphis, has been operating satisfactorily in Dayton, Atlanta and Ft. Wayne for several years. The garbage is dumped from above through circular openings in the top of the furnace, and falls on a grating of fireclay that runs the length of the oven. At one end two fires are maintained, one above, the other below the grating, while from the other end a chimney rises 85 feet in the air. The great height of the chimney creates a strong draft, which draws the flame and heat through the length of the furnace, igniting and reducing everything to a fine, dry powder.

The essential point of this plan is to take advantage of the combustible matter in the garbage. The fierce draft carries all cinders and odors to the chimney, where they are perfectly destroyed in a charcoal fire, kept constantly burning. The cost of these crematories is very moderate. The two plants cost $1400 to build, and the running expenses are $16 a day for labor, fuel, etc. The six weeks they have been employed in Memphis is the time when refuse abounds, and they have not only burnt up everything thoroughly, but have shown a capacity for doing much more than has been required of them.

THE TRI-STATE MEDICAL ASSOCIATION.

The Tri-State Medical Association of Mississippi, Arkansas and Tennessee, will meet in this city on November 16, 17 and 18 inclusive, in the Ladies' Ordinary of the Gayoso Hotel. The meetings have formerly lasted two days, with three sessions each day, but the growth in size of the Association, and the large number of

papers presented, have necessitated a three-day meeting, with three sessions each day. The Secretary, Dr. McKinney, is already at work on the program, which he assures us will be of unusual excellence, and under the Presidency of Dr. Happel, than whom a more efficient presiding officer cannot be found, the meeting is sure to pass off smoothly, expeditiously, and with that snap which insures interest, success, and, correspondingly, value.

REPORTS OF SOCIETIES.

MEMPHIS MEDICAL SOCIETY.

STATED MEETING, JULY 5, 1898. DR. T. J. CROFFORD, President.

Dr. E. C. Ellett presented a patient on whom he had performed *Mastoidectomy During Pregnancy.* The patient was a girl of 18, about six months pregnant with her second child. She was seen on May 20th, with a suppurating ear and mastoid tenderness, following purulent rhinitis. Under ice compresses and alkaline douches to the nose and ear, the tenderness subsided and the nasal discharge stopped. On June 12th she was found with a swollen and boggy mastoid, not fluctuating, and the posterior wall of the canal pushed forward till it touched the anterior. There was an otorrhœa, slight fever, and pulse 132, with pain and tenderness over the mastoid region. The usual mastoid incision revealed necrosis of the tip, and soft purulent granulations filling the apophysis. The entire mastoid cortex was removed and all necrosed bone curetted away, exposing the dura over an area $1\frac{1}{2} \times \frac{3}{4}$ inches. The lateral sinus was opened and contained no clot. The upper part of the wound was closed, and the lower portion and external auditory canal packed. The temperature never went to 100°, and the pulse fell to 108. The upper portion of the wound united by first intention, and the lower was filling rapidly. Since the operation there has been no discharge from the ear.

Dr. G. G. Buford asked if it was customary for the otorrhœa to cease after a mastoid operation. He had a patient under observation whose ear occasionally discharged a very little, though the mastoid wound had closed.

Dr. A. R. Porter said middle ear suppuration usually accompanied mastoiditis. He cited a case in which no discharge had appeared, but paracentesis revealed its presence, and a mastoid operation was subsequently done with good result.

Dr. Ellett understood Dr. Buford to ask if the otorrhœa continued, as a rule, after the mastoid operation. He said it usually does not, unless the operation fails to establish a free opening of the mastoid antrum and thus drain the ear, or unless necrosis existed in the bony or soft tissues of the ear.

Dr. Ellett read a paper on *Some Severe Cases of Tobacco and Quinine Blindness.* He reported four cases:

Case I. A man of 26, a cigarette fiend for fifteen years and a drinker for six, was taken with typical alcohol-tobacco blindness, and the vision sank to 6-200 in each eye. Treatment was refused, and the patient died in a few months of acute tuberculosis.

Case II. A man of 28, a cigarette smoker since 12 years old, and a cigar smoker since 21. He drank moderately. His vision was 20-200 in the right eye, and 3-200 in the left. Stopping the alcohol and tobacco, and alterative and tonic treatment brought his vision to normal in four months, though a contraction of the visual field remains. The eyegrounds were characteristic.

Case III Is probably wrongly mentioned here. A strumous mulatto boy, using moderate quantities of tobacco, lost his sight rapidly. His vision was reduced to perception of light. The eyegrounds suggested axial neuritis. Large doses of iodide restored the vision in the right eye, leaving a contracted field of vision, but did not influence the left.

In all these cases the "papillo-macular" bundle was atrophied, a condition which Uhthoff finds to be the lesion in blindness from tobacco and alcohol.

Case IV Was a young man who showed white atrophy of the optic nerves, following the ingestion of 120 grains of quinine in twelve hours. He experienced no eye symptoms for four days after taking the drug, but then rather quickly became stone blind, and remained so three months. Vision then slowly improved. The right eye saw 5-200. A central scotoma persisted in the left.

Dr. E. P. Sale saw a case years ago in which blindness followed a dose of half ounce of quinine. Dr. Sale is sure the sight was still gone at the end of two years. He has seen many cases of

temporary disturbances of vision from large doses of quinine. He is himself a smoker, and fears tobacco amblyopia, but does not think it as common as literature would lead us to believe. In Dr. Ellett's first case he thinks the sexual history should have been considered.

Dr. Ellett said that most cases of quinine blindness recovered central vision. Tobacco and alcohol probably influence only the eyes of persons who possess an idiosyncrasy to these drugs. These would explain the immunity which many enjoy. He does not know about the sexual conduct of the first patient.

Dr. J. H. Reilly read a paper on *The Bacteriological Diagnosis of Typhoid Fever*. He does not think typhoid or enteric fever exists unless there is a bowel lesion. In the absence of these, the presence of the bacillus typhosis does not mean typhoid fever, and he thinks the bacillus coli communis is often mistaken for the bacillus typhosis. He considers the Widal test of doubtful value, and urges the necessity of investigations leading to a distinct separation of the above mentioned confused bacilli.

Dr. F. A. Jones questions if Dr. Reilly knows what typhoid fever is, and thinks the studies incident to the preparation of the paper have been confusing the author. Dr. Jones lays great importance on the clinical aspect of typhoid fever in contrast to the bacteriological, and is convinced that it is well named "enteric fever."

Dr. J. H. Venn thinks if Dr. Reilly is confused as to the nature of typhoid fever he has good company in the persons of other well-known observers.

Dr. F. D. Smythe, in this connection, mentioned the case of a young man whom he had seen on the second day of a fever, which was uninfluenced by quinine. For ten days he presented the clinical picture of typhoid fever, the temperature being easily controlled by antipyretics. On the tenth day he began to have daily chills, which were arrested after three days by large doses of quinine. These chills returned when quinine was suspended. Blood examination, conducted by Dr. Smythe and Dr. Krauss, demonstrated the Wyatt-Johnson reaction, and showed the presence of malarial organisms. The malarial element being kept down by quinine, the patient is running the typical course of typhoid fever. This is a case of double infection. Dr. Smythe does not see that Dr. Reilly's studies have been of any benefit to him.

Dr. Venn thought Dr. Smythe's case unusual, and said that Thayer found malarial organisms but once in the blood of 296 patients with typhoid.

Dr. Smythe said that Osler mentions, in his late work on practice, the possibility of a coëxistence of malarial and typhoid, but blood examination of 400 cases hailing from malarial districts failed to reveal the presence of malarial organisms, practically placing himself on record as to the non-coëxistence of these two forms of fever. That these cases are not typho-malarial fever, however, most of us agree. That they do exist, is clearly shown by a case of Dr. DeLoach and his own.

The President was glad to learn something of our continued fevers. What is called "typho-malarial fever" runs from five days to three weeks, uninfluenced by any treatment. He is not in the habit of treating these fevers by drugs if quinine fails to impress them in the beginning. He thinks "typho-malarial" an improper name, but he does not think it is typhoid.

Dr. Sale said that Woodward suggested the name "typho-malarial," but subsequently admitted that he was in error. Dr. Sale recognizes three fevers in this locality. The first he calls "thermic fever," which lasts three to five weeks, and is uninfluenced by drugs. He does not know what the lesion in this fever is, nor have bacteriologists found a cause. The second class comprises the malarias. Intermittents are common, but he has not seen the remittent type for many years. The third is enteric or typhoid fever. In the diagnosis of this fever, Dr. Sale lays stress on the rose spots and the "deerfoot tongue." He is hopeful that bacteriology will solve the question of our Southern fevers. At present, the verdict as to a specific bacillus is, "not proven."

Dr. Reilly said that his studies taught him not to come to the society and report cases that gave the Widal test as typhoid. He mentioned the great opportunities offered right here for the study of these fevers. He has seen a case somewhat similar to Dr. Smythe, in which hyaline (malarial) bodies were present in the blood, and the blood was found by the city bacteriologist to give the Widal test. He reverted to our facilities for studying fevers, and suggested that one of the local journals would be willing to publish such reports, including clinical records and blood examination, both for malarial and typhoid germs.

Dr. Ellett assured the society of the coöperation of the LANCET in such a study.

STATED MEETING, AUGUST 2, 1898.

Dr. E. C. Ellett reported a case of *General Emphysema Following Tracheotomy.* The patient was a boy 2 years old, whom Dr. Ellett saw through the kindness of Dr. Rudisill on July 27. Four days before, while eating watermelon, he was seized with an attack of coughing, quite croupy in character, which had continued ever since, the child presenting no other symptoms. Auscultation over the trachea elicited a sound which might have been produced by the flapping of a light foreign body. Expectant treatment not being agreeable to the family, tracheotomy (the low operation) was done next day under chloroform. Aside from the embarrassment occasioned by a short, fat neck, the operation was an ordinary tracheotomy. Exploration of the trachea down to the bifurcation and up to the larynx did not detect any foreign substance, but induced a fit of coughing by which a watermelon seed was expelled from the wound. The wound was then cleansed and closed with three layers of catgut sutures, one in the trachea, one in the muscles and one in the skin and fascia, and the dressings applied. Following recovery from the anesthetic, the child began to cry, forcing air out of the tracheal wound, and thence along the layers of cervical fascia, since close apposition of the skin wound prevented its escape to the surface. The child swelled to an alarming degree, the emphysema being at first confined to the left side of the body and the right side of the head, but soon involved the subcutaneous tissue of neck, face, scalp, chest, abdomen and scrotum. The legs were not affected, and only one arm (left) slightly. In a crying spell the child would double his size, and on quieting the swelling would greatly subside, but not disappear. In some places the skin was raised nearly two inches from the underlying parts. The next day the condition was less marked, and now, after six days, is almost gone. The wound healed by first intention, and the child was at play three days after the operation.

Dr. J. H. Venn thought it bad practice to explore the trachea in these cases for fear of pushing the foreign body into a bronchus. He has seen emphysema of this character following laparotomy, but confined to a rather small area around the wound.

Dr. Wm. Krauss has seen two cases of emphysema following injuries to the chest. One was a man who was caught between two cars and crushed, breaking two ribs. He had emphysema of the upper part of the body, arms and neck, and much shock. He recovered. The other case was a slighter injury, the emphysema being limited to the neck, and he too recovered.

Dr. E. P. Sale recalled a case he saw many years ago, in which he did a tracheotomy and removed a watermelon seed by means of a horsehair loop. The wound was closed, and emphysema of the chest and neck developed without any ill effect.

Dr. Krauss reported a case of a negro man, aged about 55, weighing about 200 pounds, whom he saw with Dr. Hamilton. When first seen, the patient was propped up in a chair suffering greatly with dyspnea. He had general anasarca and ascites, liver enlarged and displaced downward, heart dilated, cervical veins full and pulsating, and a bellows murmur at apex. The case was at first believed to be regurgitant, and so diagnosed by several physicians. On account of above physical signs, tricuspid lesion was suspected, although there was no murmur with second sound (tricuspid lesions being generally secondary and always rare). The doctor returned with a stethoscope and found a murmur most distinct at the ensiform cartilage, both the murmur and the "boom" of the mitral being heard at the apex. The aortic and pulmonary sounds were heard distinctly at their respective cartilages. The murmur was found propagated along the veins of the neck, which were swollen, and over the liver. The sound was synchronous with the pulse beat at the wrist, but the pulsation being rapid, it was difficult to follow. *Primary tricuspid regurgitation* was therefore diagnosticated. The patient's history seems to corroborate this: About a year ago, the patient who, as stated, is very heavy, had an awkward fall from his wagon, striking on his left side. He states that he never fully recovered from this—had been always "poorly" since. Some months ago, while unloading sacks from his wagon, he was suddenly seized with a pain and could not get his breath. Since then he has been unable to work—been dropsical and dyspneic. This history explained, in Dr. Krauss's opinion, the tricuspid lesion. Whether this be a partial laceration of the valve, increased when lifting heavy sacks some months later, could only be determined post-mortem, but this the Dr. believes to be the case.

Elaterium, veratrum viride and codeine enabled the patient to get about with comfort, and by slowing the pulse to 70–80 beats, made it easy to confirm the diagnosis.

Dr. Ellett reported a case of *Foreign Body in the Nose for Two and a Half Years.* The patient, a child, had an offensive one-sided nasal discharge, which Dr. Ellett said was quite characteristic of foreign body in the nose. She had been treated for some time by a specialist for "catarrh," but he failed to detect the cause. The substance was a shoe button, and its removal was followed by prompt and complete cure.

Dr. Ellett also mentioned a case of *Great Improvement of Hearing Following the Removal of the Ear Ossicles.* The patient had been deaf many years following a scarlatinal otitis. By removing the remains of the thickened drum and the malleus and incus, and liberating the stapes, the hearing rose from the ability to hear a whisper at eighteen inches, to hearing it at nine feet.

Dr. Venn remembered seeing a case in which a plug of cotton was removed from the nostril, having been placed there ten years before to control hemorrhage.

Dr. G. G. Buford saw a patient a few years ago with Texas screw worms in the nostril, causing a profuse foul discharge. Chloroform was successfully used to kill the worms, but the sense of smell was permanently impaired.

Dr. Ellett mentioned the fact that either chloroform or oil was the best means to kill these worms.

Dr. Sale spoke favorably of the bi-sulphide of carbon, which he said was also an excellent remedy for scabies, now prevalent.

MEMPHIS PATHOLOGICAL SOCIETY.

STATED MEETING, AUGUST 6, 1898. DR. E. C. ELLETT, President.

The President exhibited the following specimens:

I. *An Eye, Embedded in Glycerine Jelly, in Which a Foreign Body (Steel) had Lain for Two and a Half Years.* At the time of the accident the patient was seen but once, and the presence of the foreign body not recognized. When he returned recently, the ball was shrinking and the foreign body was protruding from the scar of the wound in the upper and the outer corneal quadrant.

II. *An Eye, Embedded as Above, Removed for a Perforated Corneal Ulcer*, with extrusion of the lens, and detachment of the retina and choroid. The method of embedding was that of Würdemann, and had already been demonstrated to the society. The eye is hardened in formalin (5 per cent.), frozen in ice and salt, cut and placed in glycerine and water for two days. The jelly is made by dissolving 1 oz. "Gold Label" gelatin in 8 ozs. of water by heat. The shells and whites of two eggs are added, and, after filtering, an equal quantity of glycerine. The eyes are mounted in this in specially made glass jars, and the jelly hardened by exposure to formalin gas.

III. *A Macroscopical Specimen of Aspergillus from the Ear*, showing very well the similarity in appearance to wet paper.

IV. A section of a *Malignant Growth* (*Rodent Ulcer*) *Removed from the Outer Canthus of a Boy, aged* 22, twice before this, and now recurring for the third time. Leaving to Dr. Krauss the discussion of the specimen in detail, the President referred to the unusual feature of any form of epithelioma in so young a patient, and to the clinical characters of the disease. Infiltration extends a very little ways beyond the ulcer, since ulceration advances as rapidly as hyperplasia. There is no glandular involvement.

V. *A Slide Showing Gonococci*, of interest because they were found in the secretion from the eye of a little girl, aged 3. A few months ago the President presented a similar case to the society from a little girl 5 years old.

Dr. Wm. Krauss stated that the section of the growth from Dr. Ellett's fourth case showed all characteristic features of rodent ulcer, as could be seen under the microscope. Rodent ulcer is differentiated from the ordinary epitheliomata in that in the former you have a multiple invasion of the deeper tissues, and that the connective tissue stroma is more richly cellular and shows greater activity. Authors are at variance as to the exact origin of this form of growth; some claiming that they are derived from the sebaceous follicles, and others that they are derived from the coil glands. At any rate, they are cylindrical epitheliomata of the skin, which show no great tendency to infiltrate, disseminate or invade the lymphatics. The differentiation from lupus is more easily made. In lupus, the epithelial proliferation is secondary.

You have the epitheloid stroma, the tendency to caseation and the giant cells.

Dr. Stephen E. Rice presented a specimen of *Malarial Blood* stained by the Ehrlich-Biondi method, *Showing Typical Crescents.* The patient had been in Memphis only about two weeks, having come from Louisiana. He had a high and somewhat irregular fever, which yielded readily to quinine. There was no albuminuria. This is only the second time Dr. Rice has seen crescents, in Memphis, among his patients, and in both instances the infection was probably contracted elsewhere.

Dr. J. H. Reilly showed a slide of *Malarial Blood*, stained in eosin and methylene blue, showing small and large hyaline pigmented and unpigmented organisms, as many as three or four parasites being seen in a single corpuscle. The features in the case are the high and continued fever, in spite of heroic doses of quinine and phenacetin and cold baths; the appearance of rose spots on the abdomen on the fifth day of illness, followed by nose bleed, considerable delirium, and slight subsultus. The blood yielded a slow but positive typhoid reaction. The patient, a boy of 7 years of age, got well in eight days; he had never had typhoid.

Dr. M. Goltman presented a specimen of *Malarial Blood*, double stained, from a patient 21 years old, who had had a continued fever for eight days, with throbbing headaches, nose bleeds and diarrhœa. On his arrival from Water Valley, Miss., a blood examination showed a negative typhoid reaction, but marked loss of coloring matter in the corpuscles, which also show numerous estivo-autumnal parasites in different stages of development. Bi-muriate of quinine with urea in five-grain doses to the extent of three injections cured him in three days. Arsenic was then administered in ascending doses.

Dr. Krauss said he was very much surprised at the cases of estivo-autumnal malaria, particularly the crescent variety, yielding so readily to quinine; also at the absence of albuminuria, which we know ought to occur in half the cases. The specimen exhibited by Dr. Reilly is interesting and instructive. Dr. Rice's case merely proves the assertion made by himself and associates, that malarial crescents are not endemic in Memphis. Dr. Goltman's case again demonstrates the value of the hypodermatic use of quinine.

Dr. J. H. Venn said that he did not understand, and could not see why we do not, and cannot, have crescents here as well as elsewhere. On being asked whether he had ever seen them in any examinations he had made in Memphis, he said he did not think he had.

Dr. Goltman said that it was a peculiar fact that crescents were not seen here. It sounds paradoxical, but is a scientific fact of more than ordinary interest. Dr. Rice has probably made several hundred blood examinations for malaria, and in only two cases has he seen them, and these were not local infections, and even if they were they would only be the exceptions that prove the rule. Dr. Krauss has probably made several thousand examinations, and his experience is the same. It was also the experience of Dr. Young of the Marine Hospital. The thing is strange, but nevertheless true. Dr. Goltman knows that the blood from the internal organs has been examined in several cases with negative results as to crescents. The typhoid reaction in Dr. Reilly's case was interesting from the fact that he had had a similar case a few weeks before.

PROGRESS OF MEDICINE.

A Note on the Treatment of Carcinoma of the Uterus.—J. H. Etheridge (*Jour. Amer. Med. Assn.*, July 9, 1898), after passing in review the investigations and opinions of the present day on the pathology of cancer, follows with the consideration of the carbid of calcium and acetylene gas, the remedial agent of which he has made use. He says that an experience of seventeen months is too brief from which to draw lasting conclusions. Reports by many different observers from different countries are necessary to furnish results which shall remand the use of carbid of calcium to its proper place. Originality in discovering the application of this agent in its use herein described is distinctly disclaimed by the author. After determining that he has to deal with uterine carcinoma, the necrotic debris is thoroughly removed by curetting under anesthesia, till firm tissue is reached. Hemorrhage from arterial twigs is then checked by the use of the Paquelin cautery. Free irrigation with very hot water is then used to check the oozing, if

necessary. It is desirable to have the seat of the operation as dry as possible before using the carbid. Into the cavity which extends to a greater or less extent up into the body of the uterus a piece of carbid about the size of the last phalanx of one's thumb is placed. At once acetylene gas is evolved, which quickly fills the entire cavity with a froth like soap bubbles. The cavity is at once packed firmly with iodoform gauze. The vagina is packed full of the same material down to its ostium. The patient is then put to bed for three days, when the gauze and carbid remains are removed and a new piece is used. The carbid remains are naught but a grayish clay covering the cavity in the body of the uterus. It can be sponged and irrigated away in a few minutes, dried by sponging, and prepared thus for another application of the carbid. Upon depositing the carbid in the wound, we witness the bubbling of gas as seen before. Gauze packing is then used, and the patient is permitted to remain three days, until the next dressing. After a series of such applications of the dressings, the ragged, necrotic-faced ulcer is converted into a simple, clean ulcer. It presents a base covered, to all appearances, with pinkish-red granulations, destitute of the gray color which characterized its appearance after the second or third dressings. After a few treatments the edges of the cavity begin to draw in, and the area of the crater is diminished. Its entire appearance impresses one with the idea that it has taken on an entirely healthy character. Further persistence in its use is followed by progressive contraction, till finally the cavity is entirely obliterated. There is a puckering of the vault of the vagina about the small uterine os that remains, the whole field being covered by healthy pink mucous membrane. Dr. Etheridge then reports a case wherein the examination revealed about two-thirds of the cervix absent from carcinomatous ulceration. The treatment resorted to was as has been described. Now, a year and a half after treatment was instituted, the patient is comfortable and entirely free from the usual horrors of cancer. A like result has so far been obtained in another patient on whom the treatment began one year ago. Several other patients are under observation who are receiving the carbid of calcium treatment. These are in varying stages of progress. All are free from discharge, hemorrhage and odor, and the cavity is decreasing in size. As to the *modus medendi* of the carbid of calcium, Etheridge has no opinion.

Bacteriologically, a series of experiments was made, both with the carbid of calcium and with acetylene gas, on several pathogenic bacteria, under the direction of Professor Hektoen, in the laboratory of Rush Medical College, with absolute negative results. In a few cases an erysipelatous redness of the sound mucous membrane seemed to follow the use of the carbid, which would suggest that it resulted from an escharotic action of the acetylene gas. Whether the acetylene gas destroys the cancer cell by annihilative action or by chemically changing it, remains to be seen. One thing seems to be certain, and that is that the carbid of calcium at least postpones death, and makes carcinoma patients vastly more comfortable while they do live, than any treatment known to the writer.

Second Summer Complaints of Infants.—Dr. J. S. Cain of Nashville, in a paper with above title, read before the Upper Cumberland Medical Society, May 3, 1898, says that the disease is known and defined by some as cholera infantum, infantile diarrhœa, summer diarrhœa of infants, fetid diarrhœa of infants, etc., etc. That this brings about confusion, as they are all so intimately associated, that the different forms are only interchangeable phases of the same disease. He divides the disease into acute inflammatory, as in entero-colitis, the subacute often running into chronicity and marasmus, and cholera infantum proper. The author says that the different forms are only the expression of structural gastric and intestinal changes, the difference being one of degree only, and suggesting the presence of different toxic agents, producing that "algid condition" in cholera infantum, which is so different from the usual results found accompanying entero-colitis. The author then says that the occurrence of these diarrhœas during the second summer of life almost leads to the conclusion that there exist certain predisposing influences at this particular period of life and season, accounting both for the disease and its accompanying high mortality. These predisposing influences the author sums up to be, in the hyper-physiologic activity during this time of life, teething, improper food, clothing and hygienic surroundings. The author argues that from pathologic dental irritation, the mouth of the infant becomes a favorable culture field for all manner of fermentative organisms, giving rise to the frothy evacuations seen in this

disease, and that pathologic dental evolution may produce a host of inflammatory and nervous symptoms, which readily yield, if not delayed too long, to scarification of the gums. He argues that during the hot months of summer, milk and the prepared foods, which nearly all contain some desiccated milk, often undergo putrefaction before being given to the child, and thus tyrotoxicon and other putrefactive toxins are innocently given and disease generated.

As regards treatment, the author says that it should be dietetic, hygienic and therapeutic in the order named. Milk should be fresh, sterilized, diluted and modified to suit the individual case. Removal to the sea shore or mountains is also recommended; when this is impossible, light clothing, an airy room, and appropriate bathing or sponging are good prophylactic and preventive measures. The administration of large quantities of boiled water cooled is his chief therapeutic agent, and after this, opium. The author argues that the quieting and soothing effect of this drug far outweighs any actual or threatened evil which could possibly result from its employment. Calomel, ipecac, bismuth, hot applications to the abdomen, takadiastase, etc., are often indicated and do good, and scarification of swollen gums and mouth washes are beneficial, and serve to allay alimentary putrefaction. In the choleraic form of the disease the author is particular in recommending the injection of normal salt solution.

A Study of the Ophthalmic Changes in Chlorosis, Pernicious Anemia and Leucocythemia. — C. A. Oliver has a contribution (*Annals of Ophthalmology*, January, 1898) upon this subject, illustrated with six chromolithographs of eyegrounds and two sketches of visual fields, representing a thoroughness of detail and completeness of work rarely seen in literature. The vascular changes in these disorders in and about the eyeball, each having some organic causal basis, each possessing peculiarities by which its type is known and each having a grouping of interdependent symptoms, are practically pathognomonic and plainly manifest to the ophthalmoscope.

The paper includes the analysis of six cases recently seen in author's practice.

Case I. A female, aged 17 years, gave most of the typical gross signs of chlorosis. Her eye symptoms were blurring of vision, with intense right-sided supraorbital pain, increased by near-work; her conjunctivæ were blanched, and her sclerotics pearly

white. Ophthalmoscopic examination revealed a well-pronounced neuro-retinitis differing from that seen in association with gross refractive error; disc somewhat pallid; choroidal pallor; marked tortuosity of retinal vessels, especially of the veins, with slight flattening of venous walls and broadening of light reflex upon the arteries. The fields of vision for red and white were diminished. There was no organic disease. The blood examination showed red cells 2,600,000, white cells 5,624, hemoglobin 20 per cent. The red cells were very pale; there was some poikilocytosis, with a few normoblasts; differential count of leucocytes showed them to be normal. Under the influence of Blaud's pills and proper hygiene, at the end of seven weeks, the red cells numbered 4,190,000, the white ones 5,080, and the hemoglobin percentage was 80. The neuro-retinitis and all physical and ocular symptoms had gradually subsided, and the vision, which had been unimproved by lenses, rose to normal.

Case II. Anemia, probably secondary to some trunkal neoplasm. This woman was 54 years of age, and showed signs of a progressive cachexia. Examination of the urine proved negative. The white cells were normal, but the red ones were in various stages of degeneration, and numbered only 1,050,000, while the hemoglobin was 25 per cent.; pulse growing rapidly feebler, and patient not expected to live. The eye examination showed vision reduced to one-third in right eye, and nearly of normal acuity in the left; accommodation good; visual fields reduced concentrically to about one-half, and no scotoma evidenced. There was pronounced disturbance in extra-ocular muscle-equilibrium. The eyegrounds showed plainly the earliest ophthalmoscopic appearances found in pernicious anemia. There was neuro-retinitis with low-grade edema, tortuosity, a darker venous and a lighter arterial current than normal, a slight pallor of choroidal tissue, and a temporo-macular grouping of deeply-seated blood degeneration spots.

Case III Was one of pernicious anemia in an unmarried negress, aged 23 years. Patient applied on account of slight refractive error and cephalalgia. Distant vision equaled two-thirds of full acuity, and there was slight exophoria for distance. Conjunctivæ were almost transparent. The fields of vision were markedly contracted. The ophthalmoscopic picture was remarkable. The surface of the disc was of a mottled, yellowish white, with hazy edges. The fiber layer of retina, visible throughout, was thickened, opaque and intensely striated; vessels pallid, opacity of lymphsheath walls in places. Urine examination negative. Blood, red cells 1,608,000, white 3,490, hemoglobin 22 per cent. Red cells showed poikilocytosis, microcytes and macrocytes, nucleated cells of all types; no cell division. Differential leucocyte count showed polynuclear neutrophiles 51.2, polynuclear oxyphiles 2.4, mononuclear and transitional cells 2.4, lymphocytes 31.2, showing the latter two increased. The patient at end of two months was sent to the hospital, having failed to improve.

Case IV Was also one of pernicious anemia. This man, aged 38, had had fibroid phthisis of five years duration. Red cells were reduced to one-twentieth of normal, whites to one-half, and hemoglobin to 25 per cent. Death. Autopsy. Histological study of sections. Fundus showed disposition to hemorrhages into the retina; discs pallid, retina somewhat edematous; many white areas of leucocytic aggregation, others of tissue degeneration. There was marked tortuosity and pallor, especially of the arteries. The histologic examinations showed swollen and varicose nerve fibers in fiber layer of retina, and total absence of inflammatory changes.

Case V Was an aged negro with probable hematophilia, presenting a history of persistent epistaxis, and showing blood changes of pernicious anemia, the only physi-

cal sign of which was a faint, distant cardiac murmur. Blood count showed reduction of red cells to one-fifth, white normal, hemoglobin 35 per cent. Eosinophiles, polynuclear leucocytes, mononuclear poikilocytes (?) and nucleated red cells were all present. The eyeground of right eye showed new and old hemorrhages, both superficial and deep, with claret-tinted, tortuous and flattened veins. The currents of the retinal arteries extremely pallid; entire eyeground edematous; nerve head unusually pale, and in vivid contrast with the very discolored ground. There were heaps of granular matter, sinking deeply into the retinal tissue; degeneration areas; variation in intensity of pigment layer. Histological examination showed an edematous condition, a few hemorrhages, swollen and varicose fibers in fiber layer, no trace of ganglia cells, no inflammatory change.

Case VI Was a 44-year-old laborer, with splenic leukemia. The spleen was enormously enlarged; there was edema of the extremities, and tenderness over sternum. Blood count showed 2,586,000 red cells, and 256,844 white (fifty times the normal), hemoglobin 45 per cent.; some myelocytes were present. The balance of the clinical history is very interesting. Several blood counts were made, one being a complete chemical and tinctorial analysis. The myelocytes equaled the enormous number of 36.69 per cent. The eyegrounds, as shown in chromolithograph, were characteristic of leukemic neuro-retinitis, with aggregation and degeneration changes.

Sudden Death in the Puerperium.—M. Goltman (*Memphis Medical Monthly*, April, 1897) draws the following conclusions:

1. Pulmonary embolism is the cause of death in most of these cases.

2. It is rare, but so shocks a community when it occurs, that it is advisable to take every precaution to guard against it.

3. Phlebitis, varicose veins, prolonged labor, hemorrhage, sepsis, anemia, cancer, syphilis, etc., predispose to its production.

4. In the presence of peripheral thrombosis, etc., absolute rest must be enjoined, especially between the second and third weeks of the puerperium, as this is the disintegrating period of the clots. The danger should also be explicitly pointed out to both patient and attendants, thus insuring, to an extent, a hearty coöperation.

5. The extreme changes in the blood usually ascribed to pregnancy and the puerperium are erroneous, and not corroborated by modern investigation.

6. Sudden death from an embolism in the puerperium is doubtful, from physiologic, pathologic and rational standpoints.

7. Shock is both a direct and indirect cause of death in the puerperium, and should be guarded against.

8. Organic heart affections, kidney troubles, etc., are capable of producing sudden death at any time, and should not be overlooked in the puerperium.

THERAPEUTIC NOTES.

A TÆNIAFUGE:

℞	Acid salicylic,	gr. vi
	Ol. felix. mas.,	m. ix
	Ess. cinnam ,	gtt. x
	Acacia,	ʒ ii
	Aq. dest.,	f ʒ iii
	Syrup simp.,	f ʒ iss

M. Sig.: To be taken fasting, in the morning, in two divided doses at an interval of an hour.

Van Aubel.

FRECKLES:

℞	Hydrarg. bichlor.,	0.50
	Camphor,	0.60
	Alcoholis,	7.
	Plumbi subacet.,	2.50
	Zinci sulph.,	2.50
	Aquæ dest.,	2.50
	Yellow of one egg.	

M. Wet the face and let dry on.

FOR AMENORRHŒA:

℞	Strych. sulph.,	gr. 1.8
	Acid oxalic,	gr. 9
	Mangani lactat,	gr. 120
	Ferri peptonat,	gr. 120
	Ext. colocynth. co.,	gr. 30

M. et ft. cachets No. lx.

Sig.: One an hour before meals.

Bloom.

SCROFULOUS POLY-ADENITIS IN CHILDREN:

℞	Ammon. chlor.,	
	Tinct. arnicæ,	āā 10 parts
	Acid acet. dil. camph.,	
	Spts. vini gallici camph.,	āā 75 parts
	Infu. rutæ,	300 parts

M. Sig.: Apply as a wet pack.

℞	Ferri iodid.,	3 parts
	Potass. iodid.,	12 parts
	Syr. aurant, fol.,	100 parts
	Syr. acaciæ,	500 parts

M. Sig.: One or two dessertspoonfuls to be taken daily.—*Dauchez.*

SUPPOSITORY FOR HEMORRHOIDS:

R	Ammonol,	ʒ i
	Creosoti (beechwood)	gr. vi
	Picis rectificati,	gr. xxiv
	Ext. belladon. fl.,	m. xii

M. et ft. suppos. No. xii.

Sig.: One at bed time.—*Williams.*

AN ANTISEPTIC JELLY FOR ERYSIPELAS:

℞	Hydrarg. chlor. cor.,	
	Acid tartaric,	āā 1 part
	Gelose,	10 parts
	Aquæ,	1000 parts

M. Sig.: Apply locally.—*Gallois.*

EUROPHEN COLLODION:

℞	Europhen,	
	Ol. ricini,	āā 1 part
	Collodion,	10 parts

M. Sig.: Apply to wounds.

De Molenes.

FOR PRURITUS ANI:

℞	Sodii hyposulphit.,	30 parts
	Acid carbolic,	5 parts
	Glycerinæ,	20 parts
	Aquæ dest.,	450 parts

M. Sig.: To be applied by means of a wet compress.—*Penzoldt.*

TREATMENT OF COMEDONES:

No. 1.	℞	Sodii biborat.,	5
		Aquæ rosæ,	
		Glycerinæ,	
		Alcoholis,	āā 10

M. Shake; wash the skin every morning and then rub in.

No. 2.	℞	Sapo. viridis,	40
		Spirit lavend.,	
		Alcoholis,	āā 80

M. Then wash off with warm water.

Von Hebra.

NEWS AND NOTES.

A NEW medical journal is soon to be started in Dallas, Texas.

DR. B. F. TURNER left, with his family, for Canada early in August.

DR. J. B. GAGE, SR., of Grenada, Miss., died August 8th, aged 63 years.

DR. ANDERSON MORRISON of Nashville died suddenly of apoplexy on August 4th.

DR. A. G. SINCLAIR spent the month of August among the Canadian resorts.

DR. W. B. SANFORD left the city on August 16th for a few weeks stay at Chautauqua.

DR. J. L. MINOR of Memphis has returned home after a month's vacation in the East.

THE New York health department is manufacturing and selling anti-streptococcic serum.

DR. F. S. RAYMOND has returned, much improved, from the vacation necessitated by his recent illness.

DR. B. G. HENNING and Dr. P. M. Farrington have formed a partnership for the practice of medicine.

DR. R. M. SWEARINGEN, health officer of the State of Texas, died of Bright's disease on August 7th.

DR. T. J. CROFFORD left the city on August 1st for a six weeks visit to Colorado and other Western points.

DR. JNO. O. MCREYNOLDS of Dallas, Texas, was in Memphis on August 5th, on his way East for a vacation.

H. K. MULFORD & Co. of Philadelphia will contest the validity of the patent on antitoxin recently granted to Behring.

DR. F. W. HARDENSTEIN, a homeopathic physician of this city, went to the front as a private in the Second Mississippi Volunteers on July 19th.

The tuberculosis committee of the State Board of Health of New York say that it will require $1,000,000 to clear the State of tuberculous cattle.

Out of seventy young physicians examined for license to practice before the Maryland Medical Board of Examiners, twenty were rejected.

Dr. J. L. Persons, the efficient first assistant physician at the Shelby County Poor and Insane Asylum, died of malarial hæmaturia on August 20th.

Dr. Wade J. Lane, formerly of Dallas, Texas, has been appointed Medical Referee of the Equitable Life Assurance Society, with headquarters in this city.

Dr. Wm. Scheppegrell of New Orleans, accompanied by his wife and daughter, spent Sunday, August 7th, in Memphis, on his way to Colorado for a few weeks vacation.

The report of deaths from Santiago de Cuba for August 2nd, includes the name of Wm. Bears of the Second Massachusetts, the cause of whose death was given as nostalgia, i. e., homesickness.

The health commissioner of Baltimore is making strenuous efforts to induce the city to establish a filtration plant, as danger from typhoid fever (cases of which are very numerous at this time) is increasing.

On July 2d the Senate passed a resolution preventing discrimination against graduates of legally chartered medical colleges (that is homeopathic, etc.) to Army, Navy and Marine Hospital appointments.

Dr. A. O. J. Kelly, who is well known to the Lancet readers through his scholarly contribution to the August number, has been elected Clinical Professor of Pathology in the Woman's Medical College of Philadelphia.

A commission, consisting of Major Walter Reed, Major Victor Vaughn and Major E. O. Shakspeare, all surgeons in the army, has been appointed to study the causes of typhoid fever in the various military camps.

Dr. S. S. Warren of Washington, D. C., and formerly of Shelbyville, Tenn., who will contribute an article to the next issue of

the LANCET. accompanied the hospital ship "Relief" to Santiago, in the capacity of an assistant surgeon.

A COMMITTEE, consisting of Dr. Louis Fischer of New York, Dr. J. P. Crozier Griffith of Philadelphia, and Dr. F. E. Waxham of Denver, has been appointed, with power to collect the necessary money, etc., to provide a suitable memorial for the late Dr. Joseph O'Dwyer.

THE letters from Dr. A. Lapthorn Smith in this issue are the first of three letters from him of medical interest, which we will publish. Besides these from Paris and Berlin, Dr. Smith will write one from Leipsic. They give an accurate description of the work of the leading living gynecologists.

ACCORDING to Commander Wainwright's report, Acting Assistant Surgeon J. F. Bransford took charge of one of the guns on the Gloucester during the destruction of Cevera's fleet. A fair share of glory and honor has certainly fallen to the medical men in this war, not only in their capacity as surgeons, but as soldiers and seamen.

THE Seventeenth Annual Announcement of the New York Post Graduate Medical School and Hospital, University of the State of New York, for 1898–99, has just been issued. It shows that 523 practitioners of medicine have attended its courses during the past year. They came from the various States of the Union and the Dominion of Canada. There were ten physicians from foreign countries, two of these being from India and one from Japan. Only 96 were from the State of New York.

THE following committee has been appointed by the Memphis Medical Society to provide for the entertainment of the Southern Surgical and Gynecological Association: Dr. R. B. Maury, chairman; Dr. E. P. Sale, Dr. W. W. Taylor, Dr. T. J. Crofford, Dr. Heber Jones. The Association meets here on November 8, 1898, and the meeting promises to be a well-attended one. We hope the local profession will respond to the calls of this committee in a manner to enable them to provide an entertainment worthy of the distinguished men who will be with us on that occasion.

THE twenty-fourth annual meeting of the Mississippi Valley Medical Association will be held at Nashville, Tenn., October 11–

14, under the presidency of Dr. John Young Brown of St. Louis, Mo. The annual addresses will be made by Dr. Jas. T. Whittaker of Cincinnati on Medicine, and by Dr. Geo. Ben. Johnson of Richmond, Va., on Surgery. Already titles of papers are being received. These should be sent to the Secretary, Dr. Henry E. Tuley, 111 West Kentucky street, Louisville, Ky., as early as possible, to insure a good place upon the program. Reduced rates on all railroads will be granted on the certificate plan.

When one considers the unjust discrimination exercised against the Jews by the Russian government in only allowing 3 per cent. of their numbers a university education, a decree which will admit only seven to the medical department of the University of Moscow out of a total of about half a million, it is refreshing to note that the Moscow Society of Neurology and Mental Sciences is free from such narrow-minded bigotry and has elected Dr. B. Sachs of New York a foreign member. This action of the Neurological Society of Moscow will have the good effect, let us hope, of causing the Russian government to allow Jew or Gentile, heathen, theist or atheist, an education if they desire it, and especially since they can and are perfectly willing to pay for it.

A LETTER from Dr. Woody, Dean of the Kentucky School of Medicine, announces that at the instance of Dr. Wathen, and contrary to the plain letter of the statute which expressly forbids the removal of any professor unless recommended by a majority of the faculty, a majority of the Board of Regents deposed Drs. Kelly and Woody, and elected Drs. Cochran and Boyd to their chairs, and elected Dr. Wathen Dean. Dr. Woody, the deposed Dean, has secured an injunction restraining Dr. Wathen from claiming to be Dean, or receiving mail addressed to the Dean, and also restraining Drs. Cochran and Boyd from claiming to be professors. As the result of this disturbance, Dr. Joseph M. Matthews has resigned from the faculty and from the Board of Regents, and has accepted the chair of Surgery in the Hospital College of Medicine, Louisville.

A HANDSOME ENGRAVING of an old painting of the first meeting of the Medical Society of London, which was held in 1773, containing portraits from life of the most prominent of the original members, has just been issued. Among those represented are:

Edward Jenner; Wm. Saunders, whose work on "Diseases of the Liver" was the authority for many years; John Aitkin, the publisher of a "New System of Mineralogy," and one of the founders of the "Geological Society;" Thornton, author of a "Philosophy of Medicine;" Edward Bancroft, a naturalist; Robt. Hooper, who published a "Medical Dictionary," and a number of other famous men of their day. As this was probably the first medical society on record, and was the predecessor of the "British Medical Society," the engraving is of interest to the medical profession. A copy will be mailed to any physician applying for it by the Mellier Drug Company, No 2112 Locust street, St. Louis.

Result of the State Board Examination of Medical Students. The following analysis of the result of the recent examinations before the State Board of Medical Examiners of Pennsylvania will be found of interest. These gradings are the result of impartial marking, because of the fact that the men are unknown to the Board, and it is only after the report is prepared and submitted to the authorities at Harrisburg that the various medical schools represented are known and the averages determined. The results of the examination of the University of Pennsylvania medical graduates are the highest in every particular. But one student failed out of ninety-three examined, and the average of the whole body was much higher than that of the graduates of any other medical school.

College	Number Examined	Number Rejected	Per cent. Rejected	General Average
University of Pennsylvania	93	1	01.	83.63
Baltimore Medical College	25	6	24.0	76.71
Jefferson Medical College	20	5	25.	74.73
Medico-Chirurgical College, Philadelphia	76	8	10.5	78.84
Physicians and Surgeons, Baltimore	2	1	50.	76.71
Western Pennsylvania	21	8	38.1	72.39
Women's Medical College, Philadelphia	26	1	03.9	78.68
Miscellaneous	53	17	32.1	75.61
Total,	316	47	14.9	76.77

To Clean Rusty Instruments:—Brodie (*Journal of British Dental Association*) says that rusty instruments can be restored to brightness by soaking over night in a saturated solution of chloride of tin (stannous) and rubbing with chamois.—*Ex.*

BOOKS AND PAMPHLETS RECEIVED.

Electricity in the Diagnosis and Treatment of the Diseases of the Nose, Throat and Ear. By W. Scheppegrell, A.M., M.D., New Orleans, La. pp. 403. G. P. Putnam's Sons, New York, N. Y., 1898.

Typhoid Fever with Relapse—Serum Reaction Wanting in the Primary Attack. By Augustus A. Eshner, M.D., of Philadelphia. (Reprinted from the *Philadelphia Medical Journal*, January 29, 1898).

A Case of Renal Calculus of More than Ordinary Interest. By Augustus A. Eshner of Philadelphia. (Reprinted from *Philadelphia Medical Journal*, April 23, 1898).

A Case of Hyoscine Intoxication. By Augustus A. Eshner of Philadelphia. (Reprinted from the *Therapeutic Gazette*, October 15, 1897).

Orchitis, or Epididymitis, as a Complication or Sequel of Typhoid Fever. By Augustus A. Eshner of Philadelphia. (Reprinted from the *Philadelphia Medical Journal*, May 21, 1898).

A Case of Uremia, with High Temperature. By Augustus A. Eshner of Philadelphia. (Reprinted from the *Philadelphia Polyclinic*, September 25, 1897).

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Complicated Cataract—A Clinical Lecture. By S. D. Risley, M.D., of Philadelphia. (Reprinted from *Annals of Ophthalmology*, April, 1898).

Cataract and its Association with the Gouty and Rheumatic Diatheses, and their Relation to Diseases of the Eye. By S. D. Risley, M.D., of Philadelphia. (Reprinted from *University Medical Magazine*, May, 1897).

The General Management and After-Treatment of Cataract. By S. D. Risley, M.D., of Philadelphia. (Reprinted from *University Medical Magazine*, May, 1897).

Secondary Glaucoma. By S. D. Risley, M.D., of Philadelphia. (Reprinted from *Annals of Ophthalmology*, October, 1897).

Two Cases of Marked and Rapid Change in Patients Suffering from Glycosuria, Associated with Variation in the Amount of Sugar Secreted in the Urine. By S. D. Risley, M.D., of Philadelphia. (Reprinted from *Ophthalmic Record*, July, 1897).

An Optometer—A Fixed Form of Apparatus for the Trial Lenses and for the Determination of Anomalies of Ocular Balance. By S. D. Risley, M.D., of Philadelphia. (Reprinted from *Ophthalmic Record*, January, 1897).

Defective Coquille Glasses — A Frequent Cause of an Additional Irritation to Weak and Inflamed Eyes. By S. D. Risley, M.D., of Philadelphia. (Reprinted from the *American Journal of Ophthalmology*, November, 1896).

What a General Practitioner Should Know About Diseases of the Eye. By Robt. F. LeMond of Denver. (Reprinted from the *Refractionist*, Boston, 1894).

Relationship Between Diseases of the Eye and Brain. By Robt. F. LeMond, A.M., M.D., of Denver. (Reprinted from ———, 1898).

Granular Conjunctivitis and Trachoma not Synonymous. By Robt. F. LeMond, A.M., M.D., of Denver.

Exostosis of the Orbit. By Robt. F. LeMond, A.M., M.D., of Denver. (Reprinted from the *Journal of the American Medical Association*, October 28, 1893).

How Soon do Bacteria which Enter the Portal Vein Become Disseminated Throughout the System, and When Does Their Elimination Commence? By Gustav Futterer, M.D. (Reprinted from *Medicine*, July, 1898).

Contributions to the Histology, Physiology and Pathology of the Liver, Bile Passages and Bile. By Gustav Futterer, M.D. (Reprinted from *Medicine*, June and July, 1898).

Supplemental Report of the Mississippi State Board of Health to the Legislature of Mississippi. Printed by authority, 1897.

BOOK REVIEWS.

Glaucoma—Its Symptoms, Varieties, Pathology and Treatment. By Alex. W. Stirling, M.D., C.M. (Edin.), D.P.H. (London), Member of the Ophthalmological Society of Great Britain; late House Surgeon Royal Westminster Ophthalmic Hospital, London; Instructor on Ophthalmology, and Ophthalmic Surgeon, Post-Graduate Medical School and Hospital, New York; Assistant, Manhattan Eye, Ear and Throat Hospital, New York; etc. With illustrations from micro-photographs. St. Louis, Jones H. Parker, 1898. pp. 175. Price $1.50.

We take pleasure in noting the advent of the Southerner as a medical author, though this author is a Southerner but by adoption. This brochure was originally compiled for lecture purposes at the Post-Graduate Medical School in New York, and with the exception of a review of some of the author's anatomical findings in glaucomatous eyes in the Moorfields Laboratory, contains no original matter. As a compiler of the literature on glaucoma, the author has done his work with extreme care. The exhaustive bibliographical lists at the end of each chapter represent an amount of work that can be best appreciated by one who has essayed a similar task. It is certainly to be regretted that the author has let his labor stop here. In only a few instances are

theories and opinions criticized, no conclusions are drawn, and with the citation of so many diverse views, the reader is left somewhat in the dark as to the *status præsens* of the subject. Though quoting freely the opinions of others, the author does not venture to express himself as to the relative value of the various operations undertaken for the relief of glaucoma. Such a display of modesty is somewhat disappointing, and altogether unusual. We think the summing up of the case for the benefit of the practitioner who is not an ophthalmologist is extremely apt. It is that "firstly, there *is* such a disease as glaucoma, whose symptoms may much resemble rheumatism and neuralgia of the head and face, including the teeth and ear, sick headache, as well as some common forms of inflammation of the eyes, and that it is sometimes attended by fever and vomiting; secondly, that atropine *is not* a panacea for every ocular ill * * * *, and thirdly, that the practitioner makes himself acquainted with the resistance or 'tension' of healthy eyes when palpated as for an abscess, and remember that in glaucoma this tension is increased." This work has been printed in the *Annals of Ophthalmology*, but contains typographical errors in spite of the double opportunity to correct them. It is a complete encyclopedia of the literature of glaucoma up to the present time.

Electricity in the Diagnosis and Treatment of the Diseases of the Nose, Throat and Ear, with 161 illustrations. By Wm. Scheppegrell, A.M., M.D., New Orleans, La. G. Putnam's Sons, New York, 1898. pp. 403. Price $4.50.

Another book by a Southern writer finds its way to our review table, and this work is of great interest to all medical men. Eighty pages are devoted to the consideration of general electrical principles, batteries, etc., employed in medicine. The whole subject is plainly and carefully elaborated, the author emphasizing the necessity of the physician who employs electricity as a therapeutic agency having as thorough an understanding of the details of his subject as he should have of the materia medica, physiological action and preparation of any other remedial agent, a knowledge, we may say, often sadly lacking, as was demonstrated at a recent meeting of a national society, in which an author presented a paper on the use of a form of electricity, of whose nature, dose and action he was profoundly ignorant. Passing from these points, the work under discussion takes up the various appliances for the application of electricity in its varied forms, galvanic and faradic batteries, static machines, electric illuminators, electro-cauteries, trans-illuminators, electric vibrators, electric saws and drills, electrolytic and cataphoretic appliances, and finally the *X*-Ray. Profuse illustrations aid to a full understanding of the subject. We are then given a classification of the diseases of the nose, throat and ear in which electricity may be used, and how, and when. Possibly the best chapters, if there can be the best among so much that is excellent, are those that deal with vibratory massage and cupric cataphoresis. The former subject is reviewed at length before describing the various electrical instruments for its application. Cupric cataphoresis in laryngeal tuberculosis owes much, if not all, its prominence to the author of this book. It is applied with a bulb of pure copper on the positive pole, which sets free an oxychloride of copper, and this agent permeates the tissues on its way to the negative pole. While the results are good, indeed brilliant, they are often rendered useless by the march of the primary disease in the lungs. The subject of trans-illumination is thoroughly presented, and the whole work is up-to-date and thorough--characteristic of its energetic author. Of the portion of the book devoted to the X-Ray, suffice it to say that it is both interesting and instructive. The volume concludes with an excellent bibliographical index.

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ORIGINAL ARTICLES.

THE TREATMENT OF ABORTION.

BY HIRAM N. VINEBERG, M.D.
NEW YORK.
Attending Gynecologist, St. Mark's Hospital.

When we stop to reflect what a frequent occurrence abortion is (one in every four or five pregnancies, according to Hegar and others), and how frequently it is the starting point of serious pelvic lesions, the importance of the subject of its treatment will force itself upon us. The profession at large fails to realize what a prominent role abortion—spontaneous and provoked—plays in the causation of gynecological affections. The reason of this failure lies in the circumstance that the cause is insidious in its action, taking at times months or years before the resulting lesion or lesions make themselves manifest by objective and subjective symptoms. A woman has experienced an early abortion, and apparently every thing has run a normal course. Months or years later she begins to suffer from backache, flitting abdominal pains, and from leucorrhœa. On examination a hard and enlarged uterus is found—in other words, chronic metritis, gradually brought about by imperfect involution following the abortion.

In another class of cases the woman will recall that she had slight fever for a day or two while the event was in progress, but she attached no importance to this, and said she felt quite well for months afterward. But for some time past (we will assume this

took place a year after the abortion) she had been having pain off and on in one or both groins, the pain radiating down the thigh and toward the hip joint. On examination we find a slightly thickened tube and an ovary which is larger and more sensitive than it ought to be—in other words, a salpingo-oophoritis. This woman has had a mild septic infection resulting in a slightly damaged tube and ovary, which, with the lapse of time, has increased in degree, and begun to give rise to symptoms. The writer might go on multiplying these examples, but those he has given will amply suffice to illustrate the truth of his assertions.

The treatment divides itself into that of threatened and actual abortion. The scope of this paper will not permit our entering into the subject of prophylaxis.

Treatment of Threatened Abortion. The abortion may be arrested so long as the death of the ovum has not occurred. But as it is next to impossible to determine this point, we are forced, in a great measure, to act empirically. If the hemorrhage has been moderate, more particularly if the cervix has not yet dilated to any extent, we should direct our efforts to staying the threatened event. It is rarely that we will meet with success after dilatation of the cervix to the extent of admitting the index finger has taken place. Still, even with this degree of cervical dilatation our efforts will occasionally be rewarded by seeing the process arrested, the cervix close again, and the gestation go on to full term.

The patient must be put to bed in a cool, darkened room, and absolute rest enforced. She should not be allowed to sit up for any purpose whatsoever. The diet should be bland and cool. No one but the nurse and one other attendant should be admitted into the sick room. The remedy which forms our sheet anchor in this case is opium in some form. A good way of administering it is in the form of rectal suppositories, each containing one grain of the aqueous extract. One may be slipped into the rectum every four or six hours. If, when first seen, the patient is suffering severe pain, it is good practice to administer at once a hypodermic injection of morphine (gr. $\frac{1}{6}$–$\frac{1}{4}$). Viburnum prunifolium in half-dram or dram doses every six or eight hours acts as a sedative to the uterus and constitutes a valuable adjunct to the opium treatment. If the hemorrhage is profuse the patient's hips should be elevated by a couple of pillows, and cold cloths cautiously applied to the

vulva. The application of ice cold cloths to the hypogastrium is not advisable, owing to the fear of exciting uterine contractions. The same objection applies to the employment of vaginal tampons or gauze packing.

The foregoing treatment should be continued until all hemorrhage and pain have entirely disappeared for at least two days. Great caution should be exercised, after the cessation of the symptoms, in allowing the patient to keep up or about, or to resume her duties. On the reappearance of the slightest discharge of blood, or on the return of the pains, the patient should be made to go back to bed at once.

When the threatened abortion is due to the incarceration of the fundus below the promontory, the patient should be placed in the knee-chest position, and the cervix and vaginal vault exposed by lifting up the posterior vaginal wall with a good-sized Sims' speculum. The cervix is then caught with a tenaculum and gently drawn forward and downward while pressure is made against the fundus in the proper direction with a large-sized wad of cotton held in an ordinary uterine dressing forceps. In the majority of cases the maneuver will succeed in releasing the fundus and making it clear the promontory. A couple of large, firm tampons should then be placed in the posterior vaginal fornix to maintain the fundus in the proper position. It may be necessary to repeat this treatment daily for several days, until all danger of the fundus falling back into the faulty position has disappeared. The patient need not necessarily stay in bed.

Treatment of Actual Abortion. When, in spite of the foregoing treatment, the symptoms persist and the abortion becomes inevitable, or in other cases which, at the outset, show evidence that it would be useless to attempt to arrest the process, our plan of treatment must be different. There is no further need of keeping the patient under so rigid restrictions.

The treatment of actual abortion still seems to be a disputed field. Some authorities (Dührssen, Fehling) strongly urge active interference at once. Others (Lusk, Winckel) again favor an expectant plan of treatment, and would only interfere as necessity arises from hemorrhage or sepsis. It is our custom to follow a course of action which lies about midway between these two apparent extremes.

For the purposes of treatment, it is well to divide the cases into

early abortion (before the tenth week) and late abortion (from the tenth to the sixteenth week).

When called to a case of early abortion, and we have evidence that the ovum has already escaped, and there is only a slight flow of blood which has lasted a few days only, we can afford to wait a couple of days longer to see whether the hemorrhage will entirely cease of itself. Of course there must be an entire absence of febrile symptoms. The patient should be kept in bed, and the administration of ergot (℥ss t.i.d.) is advisable. While we are ready to concede that the total expulsion of the ovum and its membranes is an exceptional occurrence, still in a fair proportion of the cases in which the ovum breaks through its envelopes and is expelled alone or with a portion of the decidua, the remaining portions of the decidual residua are cast off either by uterine contractions or are discharged with the scant lochial secretions that follow.

In the same class of cases, if the hemorrhage be profuse or even scant, and has continued at intervals for several days, the proper course to pursue, in our opinion, is to curette without any further delay. In these cases, as a rule, the hemorrhage is due to retained decidua, which are firmly adherent to the uterine tissue, and no amount of uterine excitants will stimulate the uterus to such a degree as to enable it to extrude them. It is just in these early cases that we will often be puzzled to know whether the ovum has already been cast off or not. When in doubt in this regard we always decide in favor of curettage at once.

The operation, when properly done—and every practitioner ought to know how to do it properly—is so free from danger, and accomplishes the object in view so satisfactorily, that we may always safely cast the benefit of the doubt in its favor. We should plainly state the facts to the patient, and if she elects to wait to see what nature (perhaps with ergot) will accomplish, she must do so on her own responsibility. During the waiting period, if the hemorrhage be at all profuse, the vagina should be tightly packed with iodoform gauze, which may be left *in situ* for twenty-four or forty-eight hours. It must not be forgotten that all contact with the interior of the vagina must now be carried out under strict aseptic or antiseptic precautions.

In another class of cases, forming only a very small percentage, we find, at our first examination, the ovum enveloped in some of

its membranes lying in the cervical canal. In some of these cases the ovum is easily removed by hooking the finger above it and drawing it down; in others again, the external os is so rigid and unyielding that its lips may have to be cut before the ovum can be extracted. An ordinary placental forceps will at times prove very serviceable in seizing the ovum and twisting it off as one would an ordinary polypus. In the majority of these cases any further interference will be unnecessary. But if the hemorrhage should not promptly cease after the above procedure, the uterus should be subjected to a thorough curettage.

In a third class of cases, to which we are called, we may have unmistakable evidence in the circumstance that the uterus corresponds in size to the period of gestation, that the ovum and all its membranes are still within the uterine cavity. Two courses are open to us: (1) To anesthetize our patient, forcibly dilate the uterus with branching dilators, and thoroughly empty the uterus, be it with the fingers alone, or with the curette alone, or with a combination of both; and (2) to pack the cervix and vagina with iodoform gauze, and to wait for twenty-four or forty-eight hours to see if nature will be able to complete the process. The author's custom is to adopt the first course, unless the patient strenuously objects to it. The objection that may be raised against this plan of treatment is that it usually necessitates reliance upon the curette alone, as it is not often that the cervix can be dilated to the extent that one or two fingers may be passed into the uterine cavity. Should anyone, however, not have sufficient confidence in his skill to use the curette in this manner, the second course may be pursued in part. The packing can be made to serve the double purpose of arresting the hemorrhage and dilating the cervix. After the lapse of twenty-four or forty-eight hours the cervix will usually be found to have undergone sufficient dilatation to admit one or two fingers, with which the greater part of the uterine contents may be removed. The gentle use of the curette will succeed in bringing away the remainder.

We consider the employment of any form of tents to dilate the cervix as unsafe and unreliable practice.

A great deal of discussion has taken place as to the relative merits of the finger and the curette for emptying the uterus in abortion. In our opinion, it really matters little what is used so

long as the products of conception be totally removed. In a great many cases it is impossible to obtain such dilatation of the cervix as to admit the introduction of one's finger. On the other hand, even when the finger can enter the uterine cavity, it is not often possible by this means to bring away all of the contents. In these cases it is the writer's practice to remove as much as possible with the finger and then to supplement it with the use of the curette, employing the finger from time to time to ascertain if there is still anything left behind.

In late abortions, the general line of treatment resembles more or less closely that just described. At this period, however, we do not meet with the same difficulty in determining in a given case whether or not the fœtus has been expelled. It is no longer possible for it to escape without exciting the notice of the patient or the attendants. If the fœtus be still within the uterus it is a good plan to pack the vagina with iodoform gauze, pushing as much of the gauze within the cervix as possible, even should the hemorrhage be not profuse. The cervical and vaginal packing has the effect of exciting uterine contractions, bringing about cervical dilatation, while at the same time it forms a safeguard against the occurrence of hemorrhage. At the end of twenty-four hours the packing should be removed, and if the cervix be found dilated, the uterus should be emptied with the patient fully anesthetized. In extracting the fœtus, care should be taken not to tear the trunk away from the head, the delivery of which may cause considerable difficulty. This accident, however, will happen at times, no matter how careful we may be. It is a good plan in these cases to depress the uterus with one hand above the symphysis and thus fix the round, ball-like body, while with the finger or fingers of the other hand in the uterus a hole is bored in the head which, thus being hooked into, may now be easily extracted. When it cannot be thus delivered, it may be easily broken up with the fingers and removed piecemeal. In carrying out these maneuvers, care ought to be exercised not to lacerate the soft uterine walls, an accident that need never occur, and one which the author has never met with, although he has resorted to this course on several occasions. The secundines in the majority of cases can next be removed with the fingers in the uterus, being aided by the other hand above the pubis with which the uterus is depressed and held in a steady posi-

tion. When all of the secundines cannot be removed in this manner, the interior of the uterus can be gently scraped with a large, partly sharp curette, known as Mundé's or Lusk's.

If on our arrival we find that the fœtus has already been delivered, but that the secundines are still retained, we should set to work at once and remove them in the manner just described, and not wait for the occurring of hemorrhage or sepsis before interfering. If the cervix be not sufficiently dilated, we should accomplish forcible dilatation, either with the finger or steel divulsor.

In all cases, after emptying the uterus, its cavity should be thoroughly irrigated, either with plain sterilized water, lysol (1 per cent.), carbolic acid (2 per cent.), creolin ($\frac{1}{2}$ per cent.), or corrosive sublimate (1–2000 3000). When using the latter agent, an irrigation with sterilized water should follow. The toxic effects of corrosive sublimate solutions are not due so much to the absorption during the irrigation as to the fact that a certain amount of fluid always remains behind in the uterus, and is in part absorbed before it can drain away.

At all periods, and in every stage of abortion, where there are any indications of sepsis, as manifested by elevation of temperature and rapidity of the pulse, or by a too rapid pulse, the temperature remaining normal or only slightly above it, active interference is called for at once. A day's delay, or even one of several hours, may allow a mild sepsis to develop into one of a serious nature, such as may be beyond our power to control. As a general rule, the sepsis that occurs in the course of an abortion is readily amenable to the proper treatment, which consists in emptying the uterus thoroughly, and following this up with irrigations along the lines already laid down. An exception to the above rule is the sepsis frequently seen in criminal abortions, which may run as *foudroyante* a course as the severer sepsis following labor at full term.

Should the symptoms of sepsis not subside completely after the foregoing plan of action, the uterine cavity should be irrigated again, and the irrigations repeated every four, six or eight hours, according to the severity of the case. It will also be necessary to dilate the cervix from time to time, as it has a strong tendency to contract and thus interfere with free drainage. Packing the uterine cavity in these cases is absolutely to be avoided, and even a strip of gauze in the cervix to favor drainage is, in our opinion, a snare

and a delusion. There still seems to be a fear lurking in the minds of some distinguished authorities (Lusk, Garrigues and others) that curetting a highly septic uterus will destroy the protective wall which nature forms, the so-called "granulation zone" of Bumm. The fear is founded upon a supposed fact which does not in reality exist. The "granulation zone" was observed by Bumm only in the milder cases of sepsis in the so-called cases of "putrid intoxication;" in the severer forms of infection no such protective zone was seen, the microörganisms were found penetrating the whole thickness of the uterine wall and on the peritoneum. If Bumm's observations were to guide us in our clinical work, we would refrain from curetting the *mild* cases of uterine sepsis, while in the severe forms they would constitute no contra-indication, for we would not destroy that which did not exist.

If, in spite of the active treatment, the manifestations of sepsis continue increasing, then total extirpation of the uterus should be resorted to. But to meet with success with this procedure one must not wait until the patient becomes moribund. It is difficult to formulate rules for one's guidance in these desperate cases. But in our opinion, if the pulse goes up to 130 and higher after the uterus has been emptied and frequently irrigated, and there is no local exudate to account for the rapid pulse and the other symptoms of febrile disturbances, then hysterectomy to remove the gross source of infection, either through the abdominal or vaginal route, is indicated. The patient, from the outset, should receive the general treatment usually applied to septic conditions following parturition at term.

Curetting. We are now prepared to describe the operation of curetting the uterus. We will premise our description by saying that the same care in asepsis and antisepsis ought to be exercised in regard to it as to that of any major operation. It is only by making this a routine in our everyday practice that we will be enabled to avert any infection in all the cases coming under our care that already had not been rendered septic. The operation should not be followed by any rise of temperature in a clean case, and when it is, it generally indicates that we have introduced the germs, either with our hands, instruments, etc.

The patient should be placed upon a table in the lithotomy position, which can be attained by the various leg-holders in the

market or, in absence of these, by twisting a sheet diagonally, tying one end around the thigh near the knee, making it pass over one shoulder and underneath the other, and tying the other end around the opposite thigh, both thighs being flexed upon the abdomen. The vulva and surrounding parts should be thoroughly scrubbed with an ordinary handbrush and with warm water and green soap. Shaving off the hairs of the vulva may or may not be done. It is the writer's practice to do it. The hands should then again be washed before undertaking to scrub the vagina, which ought to be done thoroughly but not roughly. A gauze compress held in uterine forceps serves this purpose very well, aided from time to time with two fingers of the one hand. There is nothing better to reach all the corners and crevices of the vagina than the fingers or the half hand when there is a wide orifice. The vagina and vulva are then freely irrigated with sterilized water, which may be followed by an irrigation with some antiseptic solution. The legs should now be covered with sterilized cotton stockings, or what answers just as well, sterilized pillow slips, and sterilized towels placed upon the lower part of the abdomen, over the buttocks and beneath the nates—in short, every part in the immediate vicinity of the operating field except the vaginal orifice should be covered with sterilized cloths. While this is being done by the nurse, the operator should again subject his hands to a thorough scrubbing and washing. A weight speculum (Edebohls) retracts the posterior vaginal wall and exposes the cervix, which is seized with one or two volsella. No traction should be made with these, their purpose being merely to fix and steady the uterus. With one of the branching dilators the cervical canal is gradually dilated. Hegar's cervical bougies or Hank's steel dilators may first be used, and the dilatation increased by the branching instrument. In some cases the cervix is very rigid, and to overcome this considerable force will be required; in others again, the tissues are very friable, and here the greater caution must be exercised, or a serious tear extending into the uterus may be readily inflicted. After obtaining all the dilatation possible within safe limits, an attempt may be made to introduce the index finger of one hand. The finger may be able to locate the situation of the retained products, and perhaps remove them. In this procedure the instruments should be removed and the uterus depressed with the other hand above the symphysis.

In many cases it will be impossible to dilate the cervix so that the finger may be introduced, as has already been stated. In these the curette alone will have to serve our purpose, and the sharp instrument is the one we invariably employ. Very many object to the use of a sharp curette as being too dangerous, and recommend a dull one. It seems to us that less harm is likely to be done with a sharp than with a dull instrument, for we can gauge the necessary force to employ more accurately with the former than with the latter. It must be admitted that the uterus may be perforated with either instrument, even in skilled hands, but ill results need not necessarily follow. When we learn that the accident has occurred, the remainder of the uterus may still be curetted, care being taken to avoid the point of injury, and no irrigation should be employed. Should any inflammatory reaction follow, an icebag may be placed over the lower part of the abdomen, and opium suppositories administered. There is no excuse for some of the serious accidents that are occasionally reported. They are not inherent in the operation, but are due to a combination of brute force and gross ignorance on the part of the operator.

The three accidents reported by M. D. Mann were not due to the use of the curette, but to the branching dilator which, in two of the cases, evidently perforated the uterus when being introduced, and the punctures were increased in size by introducing forceps which seized coils of intestine. In Mann's own case the tear in the uterus was effected with Goodell's dilators. Still he thoroughly curetted the uterus after the accident, and the patient made a good recovery. Why these cases should be used as a warning against the use of the curette, as Mann seems to think, we are at a loss to understand.

Injury to the uterus in curetting is more frequently inflicted by pushing the curette through the uterine wall than in the act of scraping. By bimanual examination the size of the uterus and consequently the depth of its cavity can be fairly well estimated. By this means also the direction of the canal can be ascertained. In introducing the curette, therefore, we ought to know in which direction to direct it, and when it may be expected to reach the fundus. No force whatever should be employed in this maneuver.

Having passed the curette to the fundus, we scrape the wall on withdrawing it, and we soon learn in which region of the uterus

the retained products are situated. The curetting at this point may be done more vigorously, but a close watch must be kept upon the nature of the tissues removed. With a little experience we readily learn when the curette has reached the harder uterine tissue. In cases in which the uterus is very soft, the instrument, if a sharp one, need merely to be gently drawn over the surface. It is particularly in the cornua that decidual and placental residua are likely to be retained. These regions of the uterus, therefore, call for especial attention. When we feel satisfied that everything has been removed, the uterine cavity should be irrigated as stated above, but packing the uterus or vagina with gauze ought to be avoided, except those very instances in which uncontrollable hemorrhage follows the operation.

It is a good plan to administer ergot for the following four or five days in order to favor involution. The patient should be kept in bed for six or seven days, at the end of which time the uterus should be examined bimanually to ascertain if involution has progressed satisfactorily.

751 Madison Avenue.

THE EMPLOYMENT OF THE MYDRIATICS FOR THE CORRECTION OF ANOMALIES OF REFRACTION.

BY S. D. RISLEY, A.M., M.D.

PHILADELPHIA.

Attending Surgeon Wills' Eye Hospital, Philadelphia; Professor of Diseases of the Eye, Philadelphia Polyclinic and College for Graduates in Medicine.

There is wide diversity in teaching as regards the employment of the mydriatics as cycloplegics for the measurement and correction of defects of refraction. It is probable that much of this diversity would disappear were opportunity afforded to observe the actual practice of individual surgeons. The need for brevity of statement in textbooks, or even in journal literature, leads the writer to avoid the tedious details of his daily work by recording on the printed page only an outline of his methods. In reading the statements by some authors, it is made to appear that cycloplegics are not necessary; that manifest corrections, made with the assistance of objective methods, are quite sufficient for the determination of existing errors, and that, therefore, there can be no

necessity for subjecting the patient to the inconvenience and annoyance occasioned by the mydriatics. On the other hand, the inadequacy of these methods is so strongly asserted by others that it is made to appear that the writer invariably employs mydriatics to the exclusion of manifest corrections; whereas, it is probable that in selected cases both methods are adopted by the respective disputants, the first avoiding the mydriatics more persistently only than the last, the latter favoring their use in a larger group of patients than the former. That the mydriatics employed for the correction of errors of refraction are, however, both necessary and useful in a large group of asthenopic patients has been abundantly demonstrated by the experience of many trustworthy observers. That these drugs may have been used unnecessarily in some patients, is probable, but even if this could be proven, it must not be permitted to condemn their use in the very large number of patients in whom no satisfactory measurement of the refraction can be made without their aid. It remains, then, to define first the conditions which permit their avoidance, and second, those which both justify and require their employment.

Modern pharmacy has placed in the hands of the ophthalmologist a considerable group of dilators of the pupil, the different members of which possess widely different properties. At one extremity of the group may be placed atropia, which produces a wide and persistent dilatation of the pupil and paralysis of the accommodation, but possesses only mild anesthetic powers; while at the other stands cocaine, a most pronounced local anesthetic, but with little control over the accommodation, and producing an evanescent mydriasis. The mydriatics, to which experience has accorded the greatest value as cycloplegics, are the salts of atropine, hyoscyamine, duboisin and homatropine, the latter being frequently used in combination with cocaine.

Regarded from the standpoint of the duration of their control over the pupil and accommodation, they stand in the order named. The writer published in the Transactions of the American Ophthalmological Society, 1881, an elaborate study of the relative value of these drugs in the correction of refraction errors, to which the reader is referred, since additional experience has not led him to modify the conclusions then formulated. The design of the present paper is to present his views as to the necessity, method and

reasons for the employment of these drugs in the measurement and correction of anomalies of refraction.

The contention of those who oppose the use of the mydriatics for the purpose named, is to be commended in the treatment of a considerable number of patients who apply for relief from the symptoms of eye strain depending upon the presence of hypermetropia, either simple or combined with astigmatism. There are many persons afflicted with these defects whose tastes or occupation do not demand the continuous use of their eyes at near work. After protracted use, they suffer from blurring of the page, or from a sense of tension or strain in the eyes or frontal region, but are not victims of the severer symptoms, which we record briefly under the term—asthenopia. They do not suffer from undue sensibility to light, and the ophthalmoscope reveals a healthy fundus. They select, without difficulty, a convex glass which secures their comfort, gives them a normal acuity of vision, restores the physiological near point, and meets fully, it may be for years afterward, all their requirements. In such patients it is not necessary to employ a mydriatic. Indeed, the paralysis of the accommodation may serve to unsettle the acquired relation between accommodation and convergence, and may thus add to their difficulty by making the constant use of glasses an absolute necessity for comfort, whereas, before the use of the drug, they experienced no annoyance, except after protracted near work. The use of cycloplegics in this class of patients may justly be regarded as meddlesome therapeutics.

Many patients of this class go to the opticians and are fitted with glasses which serve their purpose. While this practice is not to be commended, the fact must be allowed to demonstrate the force of the foregoing statement. If an attempt to avoid the instillation of the cycloplegic does not secure the needed comfort, in most instances, it can be employed later, the patient being in the first instance apprised of the possible necessity. If this practice were oftener adopted, fewer patients would be driven to the "oculist optician" by the dread of "drops." When the absolute necessity for the use of a mydriatic exists, few patients will be found to object. In my own experience, the vast majority of patients who require glasses are sufferers from genuine asthenopia, and most of them come, having already received glasses, given without the use of a mydriatic, or after its hasty or inadequate

employment, and having failed to secure relief, seek further advice. In these patients, careful study reveals an interesting and highly important group of conditions and symptoms. With their glasses they may enjoy approximately normal acuity of vision, but they are very likely to have puzzling minor grades of abnormalities ot ocular balance, especially low grades of esophoria or hyperphoria. The eyes are irritable, the conjunctiva and caruncles are injected; they have mild *blepharitis marginalis*. Periorbital, frontal, or post-ocular pain is present, which radiates to the occiput, nape of the neck, or even to the shoulders, the symptoms often eventuating in violent explosions of so-called sick or nervous headache, which drive them to bed in a darkened room.

The fundus will be found injected, often fluffy and flannel red. The nerve head is also injected, its margin more or less obscured by the striated retina and turgid choroid. There will frequently be found small crescents of pigment absorption embracing the temporal margin of the nerve and granular changes in the choroid, extending outward toward the fovea. Any persistent effort to select glasses brings on increased congestion, and a corresponding irritability with aggravation of the subjective symptoms. Variable results follow successive attempts to select a glass. On succeeding days, a variable relation between the spherical and cylindrical surfaces of the glass will be manifested, and the direction of the principal meridians will, in low grades of astigmatism, be different from day to day. In such cases the ophthalmometer, while often of service, is not a trustworthy guide, and often proves a broken reed to lean upon. In these patients the only alternative is the employment of a mydriatic. Of late years, the patients seeking relief at my hands have, in relatively greater numbers, presented more or less closely the picture I have portrayed in many, or all, of its details. In every patient of this class, three questions present themselves. First, what is the motive for the employment of a mydriatic? Second, how shall it be used? Third, which member of the group shall be chosen?

Any sufficient answer to the first of these inquiries carries with it a logical reply to the second and third. It is obvious that no method of treatment which can be devised will free an eye in the condition which has been described in a few hours or during a single consultation, from its turgid choroid and retina. On the con-

trary, the hyperemia of the intra-ocular membranes and the irritability of the eye is often apparently increased by the instillation of the mydriatic if we can judge by the discomfort and general nervous irritability of the patient. It is plain that the object of treatment should be to free the eye first of all from hyperemia, and when this is accomplished, measure its static refraction with the accommodation completely paralyzed. In the employment of mydriatics in such eyes, therefore, the drug must first be regarded from the standpoint of a therapeutic agent, and, secondarily, as cycloplegic.

The great value and convenience of homatropine as a cycloplegic in healthy and comparatively comfortable eyes cannot be doubted, but in the group of severely asthenopic patients under consideration it is disappointing. To illustrate: While this paper was in course of preparation, a lady, aged 39, came from a distance for advice. She suffered greatly from asthenopia, and had done so for many years. She was wearing glasses +.50c axis 90° over each eye, which had been ordered for her six months before. She describes the treatment she had received as follows: The physician advised glasses for her relief, and placed drops in her eyes which blurred her sight for a day or more. The drops were repeated several times while she waited, and then, after a careful second examination, she received the glasses. They did not, however, remove her symptoms, but she was less uncomfortable with them than without. Vision for 6 m. was approximately normal with them or without. She was anxious to return to her home the same day. The ophthalmoscope and ophthalmometer both revealed the existence of a low grade of astigmatism, the latter astigmatism=1 D. A solution of homatropine, gr. x. to f℥i, and cocaine was instilled, and the first reinforced by repeated instillations for an hour and a half. She then selected for each eye, after careful work, +.50⊂+.75c axis 90°, v.=$\frac{6}{5}$. The ophthalmoscope, however, showed higher hypermetropia, and the skiascope indicated a higher astigmatism and inclined meridians, but she would accept no higher glass. Her sufferings had been so great that, notwithstanding her excellent vision through the selected glasses, she was advised to submit to a more careful and thorough treatment, and received a two-grain solution of duboisiæ sulphate, to be instilled three times daily at home, and a pair of smoked protecting glasses. The following day she chose,

without hesitation, O. D. +1.25⌓+.75c axis 90° v.=$\frac{6}{5}$. fac.; O.S. +1.25⌓+1.00 axis 105° v.=$\frac{6}{5}$. fac. Her headache had disappeared.

This experience is detailed at some length, not because it is peculiar, but for the reason that it is so common. Even after twenty-four hours and three or more instillations of one of the stronger mydriatics, it is by no means unusual to find that, on still later examination, or on the following day after continued use of the drops, that the first glasses chosen were incorrect.

I have very many times removed concave glasses from patients who had considerable degrees of hypermetropic astigmatism, the glasses having been selected either without the use of a cycloplegic or after its hasty and inadequate employment. In irritable eyes manifesting the intra-ocular conditions which have been described, the only safe rule to follow is to use one of the stronger mydriatics until the conditions have subsided, which may require many days. Having accurately determined the total existing error, the glasses should then be secured as soon as possible, and worn continuously during the days required for the disappearance of the paralysis of the accommodation. This enables the patient to acquire more readily the new relation between the accommodation and convergence introduced by the glasses than is the case if the glasses are first worn after the complete restoration of the power of accommodation. It is not the purpose of this paper to discuss the numerous questions which arise regarding the kind of glasses to be ordered. The propriety of ordering full corrections in myopia or hypermetropia, etc., etc., are questions which have long since been settled to the satisfaction of most individual practitioners. The therapeutic value of the mydriatics in weak, inflamed and asthenopic eyes has, I am sure, not always been appreciated in the daily routine of office work. This is particularly true as regards the management of progressive myopia and in the treatment of eyes which are still hypermetropic but nevertheless are increasing their refraction by a steady and continuous distension of the sclera.

1722 Walnut Street.

MOBILITY OF NEURON AS EXPLANATORY OF CERTAIN PHENOMENA.

BY STANLEY WARREN, M.D.
WASHINGTON, D. C.

Theories which fail to explain phenomena of health are not tenable in explanation of phenomena arising from diseased conditions. Therefore, in presenting the theory of mobility of neuron, which under abnormal influences may be pathogenic of these diseased conditions, it is first necessary to show how certain phenomena which are characteristic of healthy conditions may result from the physiological activity of neuron.

By way of parenthesis I desire to say that many of the thoughts I shall endeavor to present have been suggested from reading papers recently appearing in *The Journal of Mental and Nervous Diseases*, by Dercum of Philadelphia, and Langdon of Cincinnati.

As this paper has for its object only the study of health and disease phenomena emanating from that part of the brain wherein are located the most important centers and areas which are conceded by anatomist, physiologist and psychologist to enthrone that which we designate as reason, I will discuss only the physiology of neuron composing certain layers of the cortex of the cerebrum.

Beginning with the true physiological phenomena of mental activity—thought—I shall discuss later several pathological conditions which may be explained by this theory and show how it may be applied to that most interesting of all nervous phenomena—epilepsy.

Mental activity is as necessarily productive as is muscular activity; and as the one results in work, so the other is material in the products of thought. Mental activity can, as we know, only exist during wakefulness or consciousness; don't confound this with brain activity, to which I will refer again. Mental quiescence is naturally concomitant with unconsciousness: either physiological unconsciousness, as in sleep; induced unconsciousness, as from anesthesia; or from unconsciousness resulting from diseased conditions, as in a faint, hysteria, epilepsy, etc.

To make my position clear from the beginning, I must assume that the following conditions are possible and logical. I may also add that these theories are accepted by many and have yet to be disproven :

1. That neuron has mobility, and the nerve cell individuality ; and this combination is the result of education and heredity ; and that all nerve cells are educated for a purpose.

2. That thought is the result of a combination of educated cells ; and this combination is the result of habit and hereditary influences.

3. That diseased mental phenomena are the consequences of interference with the physiological functions of neuron.

4. That this mysterious immaterial thing which we call life is a molecular motion within the nerve cell.

Studying first the newborn infant, whose mass of nerve cells are as yet uneducated, and before it has felt the warmth of its swaddling cloth or the maternal blood has ceased to course through its veins, the first cells of the millions that go to make its throne of understanding are being educated ; and as it lies upon its first earthly resting place, winking and blinking at the candlelight if it be night, or stuffing its chubby little fist into its eyes if day has ushered in its life, light breaks upon its sensitive retinæ and sound upon its ears, and thus perhaps are born the first perceptive ideas in its virgin little brain ; and during each hour of its wakefulness will be added educated cells to its stock of ideas until we have the mind imitating, that is, the child talking ; then the mind reasoning, and finally, the mind composing.

How are cells educated ?

I will not take into consideration heredity, although it is readily seen the part heredity must play in influencing the receptibility of nerve cells for higher ideas, as in the evolution of man's reasoning powers from the lower state of imitation to the higher states of originality and individuality.

All stimulus for education must come from without and through the special senses. Seeing, hearing, tasting, feeling and smelling are the foundation upon which all thought is founded, and to which all thought can be traced. Through these come the products of thought, and therefore from nature has everything been builded, as suggestions must necessarily come from things external. Name

anything, if you can, or suggest any line of thought that cannot be traced to some suggestion through the special senses from external sources. Why cannot the child think but a few moments before its birth? It has long since quickened, life has begun, and you have that vital force present which makes a combination of idea cells possible. The brain cells are receptive; the neuron, no doubt, is as mobile from the moment of conception as it is in the infant; but there is no external stimulus, the special senses are inactive, consequently education of cells is impossible, and therefore thought is absent. But perhaps you ask, what proof have we that the child in utero does not think? Because there is no memory; and where there is absence of memory there is inactivity of thought.

Now that this so-called molecular motion, or preferably called vital force, which makes the combination of idea cells possible and is forever constant, even in sleep, you ask why are we not continually thinking, and idea cells constantly producing thoughts? Here we must appreciate the difference between brain activity and mind activity—the one being involuntary and constant, the other voluntary, and subjective to an external stimulus.

This is beautifully explained by the mobility of neuron, and as Dercum explains sleep by saying "Sleep, instead of resulting from brain anemia or some other apocryphal condition of the circulation, merely means that when the substance of the cortical cell has been diminished by activity, there comes a time when the cell processes are retracted so that the neurons no longer stand in active relation to each other. Interchange of action cannot then take place, unconsciousness follows, sleep is established. Spontaneous wakening merely means that after nutrition has reached a certain point, a point where the wasted cell has been replenished, extension of cell processes again takes place, and interchange of active functional relation is reëstablished." So this is also self-explanatory of absence of thought during sleep, and mental quiescence at other times—although it is questionable as to whether the mind is ever inactive during wakefulness. After prolonged thought and mental activity we tire and grow dull and sleepy; we have exhausted the neuron, and to what degree that exhaustion has gone will our mental condition depend, ranging from mental dullness to sleep. Exhaustion calls for replenishment, physiological rest or sleep follows until the neuron replenishes itself; we awake; the mind is

clear and immediately active, neuron contact is normal, thought is continued. Combinations of idea cells are now suggested from without through the special senses, the constant vital force or molecular wave passes through the neuron which has been replenished to such an extent that the cell processes are in contiguity, idea or educated cells are thrown into combination, a train of connected thought is possible, and expression follows. Combinations are continually changing as new suggestions come from without, and so we are able to express connected thoughts upon any subject suggested to us about which we have previous knowledge. This continues until one of two things happens to us: first, all of our educated cells upon this one subject have been thrown into every possible combination, and continued thought only serves to reproduce the same ideas in different words; or, second, the neuron has become exhausted, the processes are withdrawn, contiguity or continuity is broken, and we relapse into dullness, usually by degrees, as the neuron retracts slowly; thus we have at first disconnected ideas and finally complete exhaustion on this one subject.

However, nerve cells have been educated by suggestion through reading or discussion, and we find that later we can again take up the subject in question and reason to a greater length, now that we have more educated cells and more combinations are possible. Thus does study, reading, debating and accepting others' ideas not only broaden us in a worldly sense, but are absolutely necessary for mental development—not that I believe mental activity increases the actual growth of brain tissue, or even the number of convolutions which appear to be the signs of intelligence, for this probably is the result of the laws of hereditary influence; but it does increase the number of individualized or educated cells, and upon this depends the degree of intelligence; and I dare say if we could count the number of virgin cells in the supposed seat of intelligence, we would find as many cells in the idiot's brain in proportion to the number of convolutions as we would find in a brain having the highest mental development, but of course the number of educated cells would be absolutely disproportionate. Idiocy, therefore, is not so much a matter of absence of brain tissue as it is the absence of receptive virgin cells, which is the result of hereditary influences and those diseases in the parents which interfere with the physiological function of neuron—such diseases as hysteria, epilepsy and monomanias.

Leaving the study of this one particular physiological phenomena of mind activity—thought—I shall present the first pathological phenomena arising from interference with the physiological function of the mobility of neuron, and which is but a step from health to disease. I refer to dreams.

Why do we dream?

When physiological sleep has come, as previously explained, the neuron processes are retracted, and hence contiguity of idea cells destroyed. "A healthy sleep knows no dreams." But suppose some gastro-intestinal conditions exist which interfere with the natural course of perfect digestion, or somewhere in the anatomy metabolism is imperfect. Food products are insufficient to supply the neuron except in part, and contiguity is only impartially reëstablished. The vital force or molecular wave, which is forever constant, sets idea or thought cells in the proper relative position for connected thought, immediately neuron contact is established, and, as in health, we have connected ideas; but contact, only to the poorly replenished condition of the neuron, is very delicate, and we have obscured thought or practically only ghost of thought. Upon the strength of this contact depends the vividness of our dreams, and where contact is almost normal our dreams are so vivid as to quickly lead to wakefulness, and even a vague memory of these dreams remain. Following vivid dreams comes wakefulness, because the neuron has become replenished up to normal contact. Instantly all physiological functions begin, the neuron processes are gradually withdrawn owing to renewed mental activity, and we dream again, thus alternating between a dreamy state and wakefulness, dependent upon the strength of contact between the neuron processes.

What do we dream?

We have no control over dreams, because special senses are inactive during sleep, and having no stimulus from without, our thoughts are purposeless. The character of dreams depends upon the grouping of cells as they have been left before entering into sleep. We dream of nothing save what we have stored away through the medium of the special senses; and so we dream most often of what we have seen or read, heard and felt, and so seldom of what we taste and smell, because the individuality and education of the majority of cells are from the first three senses named.

In dreams there must be a stimulus from somewhere, or else there could not be even the ghost of connected thought. Where does this stimulus come from? Previous to a dream some incident has become vividly impressed on memory through the special senses, and these memory pictures, which are never lost, act as a stimulus, and so incidences are often reproduced in dreams after years even, when they are beyond recall of our active memory.

Interference with the physiological function of neuron may account for epilepsy. All nervous tissue is extremely sensitive to poisons, and in studying epilepsy, both idiopathic and some accidental forms, we must consider the part which certain poisons play. Animal toxines and mineral poisons are often exciting causes of epilepsy, and probably all forms of idiopathic epilepsy are due to explosions of accumulative powers of animal toxines. Now, how can these poisons so interfere with the physiological function of neuron as to cause the characteristic phenomena of epilepsy? One theory which has been suggested is, that certain effete matter which is the result of metabolic activity is not eliminated through the usual channels and in the usual manner—that is, the poisons are not properly taken care of by the eliminating organs, the kidneys, skin and intestinal tract, consequently these poisons accumulate and pile up somewhere in the anatomy, presumably the circulatory system, until the more delicate nervous system refuses longer to tolerate them, hence we have a general explosion, periodically, which is characterized by the general symptoms of an epileptic attack—that is aura, convulsive movements, unconsciousness and relaxation of all tonicity, followed or accompanied by unusual activity of all excretory organs. The system, now being clear of all poisons, enjoys a period of immunity, until a sufficient amount of poison has again accumulated, then comes another attack. There are three recognized treatments whereby the period of immunity can be lengthened, namely, certain drugs as depressor motors, dietetic treatments, and periodic venesection; therefore we must look to these treatments to substantiate our theory for the cause. If the cause be interference with the function of mobility of neuron, then these treatments must in some way control the poisons which act as the exciting cause. Poisons must overstimulate the neuron and thereby increase its mobility to such an extent that contiguity of cell processes becomes unusually strong, even to the point of unnatural pressure.

How are we to reason that this actually takes place? To do this we must return to Dercum's theory of sleep, which is a physiological unconsciousness, due to the retraction of cell processes as a result of cell exhaustion, and again we have induced sleep or unconsciousness from the administration of anesthesia, as in ether or chloroform—sleep that apparently is as natural as the sleep of exhaustion. We know that ether and chloroform are poisons, and yet when administered they give us the same conditions that physiological sleep presents, namely, temporary mental paralysis, but unquestionably in different ways, as we have the absence of pain in the one to account for. We know that any function in human life can be stopped in but one of two ways, either by a taking away or by undue pressure, therefore since physiological sleep comes to us as a result of retraction of neuron processes, it is logical to presume that anesthesia or induced sleep comes from an overnatural contact as a result of overstimulation of neuron, due to accumulated poisons. Thus the unconsciousness of epilepsy, if it comes from a poison, must come in the same way, and the fact that unconsciousness is preceded by convulsive movements, resembling those of the pre-anesthetized stage, shows conclusively that pressure at first is not sufficient to produce immediate unconsciousness.

Another fact showing the similarity between the unconsciousness of epilepsy and anesthesia is the absence of pain in both conditions, when in natural sleep we awake upon the least injury. Again, we have epileptic attacks during sleep, when presumably the neuron processes are retracted; hence, if the exciting cause still further retracted the neuron processes, convulsive seizures would be impossible, but if what we assume is correct, that poisons stimulate the neuron to an abnormal mobility, it becomes perfectly clear that we can account for epileptic attacks during sleep.

How do certain drugs, dietetics and venesection lengthen the immunity from attacks? Simply by controlling the exciting cause to a certain degree. If the blood is surcharged with these poisons, then by taking away blood at certain times we take away a sufficient amount of poison to prevent the neuron from reaching a point beyond tolerance, and if certain food stuffs are a burden to digestion, and interfere with perfect metabolism, by correcting this we remove another cause. Certain drugs, as bromides and coal-tar products, either counteract the poisons or give the neuron a certain

immunity. This in explanation of idiopathic epilepsies, which are most probably due to animal toxines. In the same manner we may account for epilepsy from mineral poisons, the theory of treatment being the same—removal of the poison.

Jacksonian or traumatic epilepsy, and epilepsy from specific causes, as alcohol and syphilis, are also to be explained by "the interference with mobility of neuron." The surgeon tells us that the prognosis in Jacksonian epilepsy is good if there has been no destruction of brain tissue, but when brain tissue has been destroyed operative interference is of no value. In Jacksonian epilepsy we have no internal cause that we can define, the physiological function is in no way interfered with from within, but the unnatural pressure from without brings into closer relation the cells beneath the point of pressure, and so the neuron, in its natural function, being restricted as it is by external pressure may, under stimulus which ordinarily would cause no general epilepsy, result in a focal epilepsy, arising from local interference with the usual functional activity, and of course the character of the convulsion will depend upon what class of educated cells are undergoing abnormal pressure. On the other hand, when important educated or individualized cells have been destroyed by an injury, and these cells have been replaced by neuroglia or connective tissue, we can readily see how the mind, in its normal condition of mental activity, may have its functions so interfered with in the combination of individualized cells by the presence of this foreign tissue, which not only interferes with the molecular wave or vital force, but also the physiological grouping of individualized cells in their production of certain work, so that surgical interference not only fails to correct but aggravates the condition by increasing the amount of neuroglia. The manner in which neuroglia or connective tissue in these extremely important regions interferes with the physiological functions can be more clearly demonstrated in studying epilepsy due to alcohol and syphilis, because here we see of what value the alteratives are in the treatment of these special forms, and how much more readily they respond to treatment than do the idiopathic forms. Knowing as we do the therapeutic action of alteratives, we again have the treatment substantiating the theory.

A FORM OF PRIMARY NASAL DIPHTHERIA.

BY E. C. ELLETT, M.D.

MEMPHIS.

Ophthalmic and Aural Surgeon to St. Joseph's Hospital, the Children's Home, and the Shelby County Poor and Insane Asylum.

Pseudo membranous inflammations of mucous membranes, like catarrhal inflammations, may result from a variety of causes. Any severe irritant, such as ammonia, the actual cautery, etc., as we know, may be the cause, as well as several pathogenic organisms, of which the Klebs-Loeffler bacillus is the most common. It is in view of these well-known facts that we no longer rely on the naked eye to determine the nature of the exudation on the mucous membrane in a given case, but rather search with the microscope for the presence of at least the most common microörganismal cause. And, in the present state of our knowledge, the presence of this organism, the Klebs-Loeffler bacillus, in the exudation formed on the surface of a mucous membrane as the result of inflammation of that membrane, stamps that case as one of diphtheria.

Of the ordinary form of nasal diphtheria, I do not propose to speak. We know it to be the most severe form under ordinary circumstances, from the abundant lymphatic supply to this region, and the consequent easy absorption of toxins. It is of the more unusual form of primary nasal diphtheria, known as "membranous rhinitis," that my remarks have to do, and I will begin by relating the history of two recent cases:

The first case was a boy of 7, who, three weeks before I saw him, was taken with what his attendant diagnosed tonsillitis. This was followed or accompanied by a nasal trouble, which showed so little tendency to ameliorate that he was taken to Dr. John Maury, who asked me to see him on October 20th. I found bilateral nasal obstruction, a little evening temperature, and both nostrils filled by a membrane of yellowish-grey color, quite tough, and covered with an abundant muco-purulent secretion. There were no other symptoms. The boy did not look sick, nor did he feel sufficiently so to stay in the house. I made a diagnosis of nasal diphtheria, which agreed with Dr. Maury's suspicions, and which was confirmed by Dr. Rice finding the Klebs-Loeffler bacilli in the discharge from the nose.

We discussed the advisability of the antitoxin treatment, but on account of the mildness of the symptoms, and the long duration of the trouble, decided not to use it. He was given a $\frac{1}{96}$ of a grain of cyanide of mercury internally, and an antiseptic douche, and made an uneventful recovery in a week. He has had no further trouble.

The second case is also a boy, aged 4, whom I saw at my office on December 8th. He had had what his mother called a "bad cold" for three weeks, and it did not seem to be getting any better. There was not, and had not been, any fever, and the only symptom was left-sided nasal obstruction and enlargement of the glands at the angles of the jaws. This, his mother said, occurred to him with every cold he took. He looked and felt well. There was a membrane of the thickness of chamois skin, and a little more grey, covering the left lower turbinated body, and detachment of it left a bleeding surface. A portion of it was submitted to Dr. Krauss, who reported as follows:

"DEAR DOCTOR—I have made spreads and culture of the membrane handed me yesterday in closed tube, and find the following: Stained for tubercle, I found nothing but some cells taking blue stain in a state of coagulation necrosis. A few diplococci roseus and lanceolatus, which may be assumed to be normal residents of the nasal cavity. Stained with Loeffler's stain, I found numerous colonies of diphtheria and pseudo diphtheria bacilli (the latter being modifications of the former). both very characteristic as to staining, morphology and grouping. I planted an emulsion of the swab on bouillon-agar, and obtained characteristic colonies of diphtheria, pure and uncontaminated by any pyogenic or other organisms. Yours truly, WM. KRAUSS."

This examination was confirmed by the Paquin Laboratory of St. Louis, who further reported that inoculation of guinea pigs with the culture proved fatal in twenty-four hours.

For the same reasons that appealed to me in the first case, I did not use antitoxin in this one, but the cyanide of mercury and a douche of peroxide of hydrogen. There was no event in the recovery, which was complete in about ten days.

Many names have been proposed for this condition, all of which recognize it as a distinct disease. I am of the opinion that it is entitled to this distinction, but to give it would lead to much confusion as to a line to be drawn between this and the more usual and more contagious forms, so that until we are better able than at present to separate the two, it is better to call it and treat it as primary diphtheria. Of the various names proposed, "membranous rhinitis" has found most favor. Fibrinous, croupous, caseous, and cholesteatomatous, are other names. The last name was proposed by Cozzolina, who thought the new formation was analogous to cholesteatoma as found in the middle ear and mastoid. Beausoliel does not agree to this, since the exudate has no enveloping membrane, and does not recur, though Murdock reports a recurrent case. Cholesterin has been found in the deposit by Neumann and McBride, but most often the membrane is of the same composition as false membranes generally—that is, disintegrated cells, fibrin and bacteria; such was its composition in my two cases.

The cause of this affection was formerly ascribed to various conditions. Scheinmann and Bories thought it was due to necro-biosis

of mucous polypi, but Wagnier found cases in which no polypi were present. Mechanical obstruction by spurs, etc., with disintegration of retained secretions, was put down by Strazza as the source of the trouble, and scrofulous children were generally agreed to be liable to it. A study of the bacteriology of the subject has changed all that. Demonstrations of the diphtheria bacillus in a large proportion of the cases has put them in the category to which they belong, leaving a minority to be put down as due to chemical or mechanical irritants, intense catarrhal inflammation, or possibly diphtheritic, in which the bacilli were overlooked. Ravenel found the bacillus in all of the fourteen cases which he examined, and Kyle in fifteen out of twenty-three cases. Ravenel thinks the organisms are in an attenuated and comparatively inactive state. Sedziak and Casselberry have noted these two forms, separable microscopically, and Abbott found the two types in two sisters, one diphtheritic the other non-diphtheritic. At least this was the inference from inoculation experiments, though morphologically identical bacilli were found in both cases. Sedziak's later experience leads him to put these cases under the head of croupous rhinitis, as he does not find the Klebs-Loeffler bacillus. In this he agrees with Bischofswerder, who sees no anology between this disease and diphtheria.

Townsend records seven cases, all diphtheritic, five of which were primary and apparently identical with the form under consideration. He emphasizes its mildness, the ease with which it can be overlooked on account of the absence of constitutional symptoms, the persistence of the bacilli after apparent recovery, and the necessity of microscopical examination and prolonged isolation. Campbell reports four cases, with a review of the literature, in only one of which a microscopical examination was made, and this one did not show the Klebs-Loeffler bacilli. No conclusions can be drawn from the other cases, since no search was made for these organisms.

The infectious property of this disease is small, indeed Scheinmann says contagion does not occur, but Concelli has reported a case which was a focus of infection, and Park one in which a mild case of this sort caused diphtheria in four other children, two of whom died. The course of the disease is mild, but chronic. It may last for several weeks, or even two months.

The symptoms are about those of a "bad cold," that is, little or no fever, nasal obstruction and discharge, and some enlargement of the glands at the angles of the jaws. Inspection reveals the presence of a membrane, the microscope reveals its nature, and until we have this positive information we must look at all these cases as diphtheritic, and therefore contagious. There is no tendency to late paralyses or to heart failure. In fact I can find no record of a fatal case, though one of Czemtska's in a nursling, and one reported by Seifert in a man of seventy-one, died with intercurrent pneumonia, and Schuler reported a case which died of erysipelas. Seifert's case hardly belongs in this class, since the membrane involved the nose, pharynx, larynx and trachea, and was found to be on, not in, the mucous membrane, that is, the so-called "croupous" exudate.

While the local symptoms are marked, they usually produce no destructive changes. Exceptions to this are Wagnier's case, where the septum and soft palate were perforated, and Ballard's, where adhesion between the turbinate and the septum occurred. Potter noted edema of lips, throat and tongue in one case, in addition to the nasal obstruction. Elsewhere Potter states that two per cent. of his cases of acute rhinitis are membranous, certainly an unusual observation, and incidentally he preaches the unity of croup and diphtheria. He and Gluck have noted that in these cases the nasal mucous membrane does not contract under the influence of cocain.

From what has been said, the prognosis, it will be inferred, is uniformly good.

The treatment must take into consideration the contagious nature of the disease, in cases where the Krebs-Loeffler bacillus is found. The patient should be isolated, and if seen early, the antitoxin treatment should be considered. If for any reason this is not given, I think experience with other forms of diphtheria would indicate the advisability of some form of mercury. The local treatment should be antiseptic, and there is a host of remedies to choose from. A weak mercurial, peroxide of hydrogen, formalin, carbolic acid, etc., suggest themselves as douches.

Gluck finds that an atropia solution locally arrests the exudation. Vladar praises insufflation of iodoform, which in five cases gave him good results. Its efficacy can be increased by combining it with stearate of zinc.

Conclusions.

1. While so-called membranous rhinitis is a disease of distinctive features and possibly a special affection, the large majority of cases are of diphtheritic origin, and should be treated as such and regarded as contagious.

2. The fact that it may be simple or diphtheritic is a cardinal reason why the noses of patients with rhinitis should be carefully examined, and any membrane therein submitted to a microscopist, since only by the microscope can we differentiate the two forms.

3. This form of nasal diphtheria leads to a chronic course, ending in recovery, and is influenced by antiseptic treatment.

4. We must regard the affection as diphtheritic until the contrary is proved.

5. In the present state of our knowledge, the presence of the Klebs-Loeffler bacillus imposes on us the duty of isolating these cases as contagious, and reporting them as such to the health boards.

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CORRESPONDENCE.

SOME LEADING EUROPEAN GYNECOLOGISTS.

This letter will give a short description of what I saw at Leipsic and Brussels, and will conclude my series of three articles on the above topic.

Sanger of Leipsic is a man of about forty-five years of age, and like all the great men I have seen over here, is a tremendous worker. Although he is a titular professor of the University, he has no beds at the public hospital, but he invited me to his private hospital, No. 24 Koenig Strasse, where he has twenty-five beds, and attends rich and poor alike. He told me that he had had no death there since seven months, during which time he had performed two hundred and twenty operations, seventy of them being laparotomies, either vaginal or abdominal. He attributes his success to his very rigorous asepsis, he and all his nurses and assistants preparing their hands for twenty minutes before the operation. Since ten years he has been using coarse sand and soft soap for his hands, followed by alcohol and then sublimate water.

He uses nothing but silk, which is prepared as follows: First, it is boiled in 1–1000 of washing soda to remove the dirt, and then in Bergman's solution, namely, 10 per cent. sublimate, 200 per cent. alcohol, and 800 per cent. water. It is then wound on little pieces of wood, on which the size is marked and kept in sublimate alcohol. The patient is always shaved the day before, and her skin is prepared with soap and water, ether and alcohol and sublimate. The preparation of the patient occupied three-quarters of an hour. The assistant in charge of ligatures burned them instead of cutting them. The first operation was for the removal of a four-pound fibroid by abdominal hysterectomy. He removed it with clamps very quickly, and then tied each artery separately with No. 6 silk. He only crosses his first knot once. His hemostasis is very perfect, and he keeps on tying until the wound is absolutely dry. His method of sewing up the abdominal wound is peculiar; he passed silk sutures on two needles from within every centimeter apart, includ-

ing the whole abdominal wall, but only the very edge of the skin. Before tying these he put in another row of interrupted No. 3 silk sutures, so as to bring the fascia and muscles together exactly, and these remain permanently. Between the through and through stitches he placed superficial silk ones every half centimeter, so that they were very close together. The wound was then covered with a light strip of iodoform gauze, covered with a large strip of plaster, and very carefully sealed.

Next day he did a precisely similar operation. He takes about one hundred minutes to do the operation, being the most careful man I have yet seen. Ether was the anesthetic used, and the inhaler was a large wire mask covered with rubber, completely covering the face, so that a comparatively small quantity was employed. As the patient was only 26 years of age, he left one ovary and tube in the peritoneal cavity, so as to prevent her from having the nerve storms of the artificial menopause. The third morning he removed a hernial sac from the left inguinal canal, which contained a rudimentary uterus, a tumor of the right tube and ovary, and a rudimentary left tube. This was a very rare case, there being only a few on record.

The fourth morning he performed implantation of the ureter into the bladder. I was fortunate in seeing this operation, as this was only the third time that it has been done in Germany, once by Wurtzel, and once by another operator, whose name I forget, although it has been done in America several times, I think, by Boldt of New York. On opening the abdomen, he found that she had closed tubes, and that one ovary contained a large cyst. He cut out the cyst and left the rest of the ovary, after carefully sewing up the flaps with fine interrupted silk ligatures. He opened up the closed tubes by cutting off the fimbriæ and sewing the membrane to the peritoneal edge, so as to make a new pavilion. The patient, who was a young woman, had had a very severe first confinement, during which the uterus and ureter were torn across, and when they healed there was a utero-ureteral fistula, and her urine poured constantly from the cervical canal. Sanger began by cutting the ureter off level with the uterus, after putting a temporary ligature in it. He then sewed up the hole in the uterus, after which he dissected out the ureter from its original level beside the iliac artery, until he had it free to a distance of six inches. He then

closed the long opening in the peritoneum, after which he threaded the ureter, attached to a bodkin, so to speak, between the peritoneum and the abdominal wall, into the top of the bladder, where he carefully stitched it. I have since heard that the operation was a perfect success. I was perfectly delighted with the few mornings I spent with Sanger, and I have no hesitation in classing him among the world's gynecologists of the first rank.

Zweifel of Lepsic is the *geheimrath* or chief professor of gynecology, and has a large number of beds in the public hospital for women, which is a large and beautiful building. He is about sixty-five years of age. I saw him perform a very difficult operation for vesico-vaginal fistula in a woman who had had hysterectomy several years before in another city. As the day was dark, he used a very nice electric headlight, supplied from the street current. The nurses did all the shaving and scrubbing in the operating room while the assistants were getting ready. As it was high up, he had the greatest difficulty in paring the edges and in passing the ligatures, and then he found that in paring the fistula he had opened into the peritoneal cavity. He at once, without rising from his seat, made a nine-inch incision in the abdomen, and instead of using Trendelenburg's posture to get the intestines out of the way, an assistant took the bowels out of the abdomen and held them back, so as to give him room, and in this he had great difficulty. As Leipsic is Trendelenburg's town, I was surprised to see any one in Leipsic open the abdomen with the patient horizontal. He finally succeeded in closing the fistula so that it stood the test that the bladder being distended with water none escaped, either into the peritoneum or into the vagina. He closed the abdominal incision with one layer of catgut for the peritoneum; a second for the fascia, and a third for the skin, with a sort of sewing machine back stitch, with two needles, which I had never seen elsewhere, and which made a very fine union of the skin. His assistant then operated on a ventral hernia, which had followed laparotomy. As he did not employ Trendelenburg's position, he had a good deal of difficulty in keeping the bowels in.

I saw a very interesting operation performed by Dr. Georgi, Trendelenburg's assistant. It was a colotomy for cancer of the rectum and uterus, and instead of opening the colon in the inguinal region, he made a median incision near the epigastrium, and

drew the transverse colon out two or three inches, and sewed it there. Then he made another incision two or three inches to the left of the first, but only through the skin. The loop of intestine was passed under the skin and brought out of the second incision, and carefully stitched there. The first incision was carefully closed and sealed with collodion, after which the bowel was opened at the second incision, and the mucous membrane sewed to the skin, when the pent-up feces poured out. By this ingenious operation, invented by Winzel and Von Hackar of Innsbruck, perfect control of the artificial anus is obtained, simply by pressing a pad over the colon as it passes under the skin, and the patient can have one or two evacuations a day.

Trendelenburg of Leipsic. Although not a gynecologist, yet he has next to Lister done more for gynecological surgery than any other man living, and I made him a visit especially to tell him that we thought of him and thanked him every time we did an abdominal hysterectomy or other piece of difficult pelvic surgery. Those of my readers who have never seen a bad pair of pus tubes removed in the pre-Trendelenburg days can have no idea of the misery which the operator endured nor of the danger to which the patient was exposed. As the work was all done in the dark, the intestines were often torn or infected without our knowing it, or some little artery would be steadily pumping into the peritoneum without being seen. Now all that is changed; the intestines are out of the way, and we cover them with sterilized towels, and we have a large, well-lighted space to work in, so that we tie every oozing point until the peritoneum is perfectly dry and clean. As I did not see any nice table there, it would be quite appropriate if the abdominal surgeons of America were to present him with a solid silver Trendelenburg table. I attended one of his clinics at which there were over a hundred students present, and it was easy to see how much he was beloved by them. He is a man of over fifty, but of exceeding modest appearance, and as he called batches of students down to the arena to examine the patients who were wheeled in, he gave each one the marks he had earned.

Jacobs of Brussels, although only thirty-five years of age, has by his enormous industry reached one of the highest positions in Europe. I am told that he is not connected with the University, the position of professor of gynecology there being held by a mil-

itary surgeon; nor has he any beds at any of the public hospitals of Brussels; but he has forty-five beds at his own private hospital, which is the most beautiful I have yet seen either in Europe or America, its cost being over a hundred thousand dollars. The nurses are Catholic sisters. He has opened the abdomen by the vagina (mostly for hysterectomy) seven hundred times, with a death rate of less than two per cent., and he has performed over one hundred abdominal laparotomies for removal of the uterus and appendages, with less than two per cent. of deaths. His method of disinfection is peculiarly his own, so I will describe it. First, he scrubs the patient with green soap dissolved in alcohol, and shaves her himself. If the operation is a vaginal one then he uses a sponge on a holder to scrub the vagina. The field of operation is then scrubbed with equal parts of saturated solution of carbonate of ammonia and biborate of soda. He then scrubs with alcohol, then with two per cent. of formaline. The first morning he did a perineorraphy, taking a great deal of time to it, but doing it beautifully, using black silk for most of the stitches, only three of them being of silkworm gut. The stitches were only one-eighth of an inch apart. He then sealed the wound with alternate layers of iodoform and collodion, so that it was quite air and water proof. He obtains his silk from a Bordeaux chemist, already sterilized, wound on glass tubes and enclosed in other tubes sealed with a rubber band. The Bordeaux firm buys it from a Philadelphia firm, which in turn buys it from an English firm, which in turn obtains it from China. He has also the daintiest operating room I have ever seen, all the tables being of polished brass and plate glass. Next day he removed the uterus, tubes and ovaries by the abdomen for double pyosalpinx, an ovarian cyst, and a fibroid tumor. One peculiarity about his method is that he cuts first and ties only the vessels which spurt as he goes along, his habit being to put four or six ligatures at the most on the isolated arteries and not on the nerves. And this reminds me of his answer to the important question which was the main object of my visit to Brussels. Why, I asked, did he abandon vaginal hysterectomy with clamps, in which he had become so wonderfully successful? Because, he said, with the clamps you compress the nerves and cause the woman so much suffering for two days that it takes her two weeks to get over it, while if you only tie the arteries and close up the perito-

neum she will be practically well the next day. In this case, as tubes were adherent to the whole anterior surface of the rectum, he carefully detached these with scissors until he had entirely freed the two large tubes as thick as sausages. He then removed them in one piece with the uterus at the level of the internal os, cauterized the cervical canal, and sewed the two flaps of the cervix together. The denuded section was cleverly covered by sewing the anterior flap to it. He had the fewest assistants I have yet seen, one of them being dispensed with by using an abdominal speculum or retractor at the lower end of the incision, and this was held tightly drawn down by having a chain and a weight attached to it, and he did not have any side holders. In closing the abdomen he used thin buried silkworm gut for the peritoneum and fascia, and larger ones for the fat and skin, and he dressed it with plain dry sterilized gauze; but this was covered most thoroughly with diachylon plaster, several layers, each piece overlapping the other. He was very careful and took nearly two hours to the operation, chloroform being used; he tells me that he considers half an hour more of no consequence compared with the importance of thorough hemostasis. Like Sanger, he brings the skin sutures very near the edge of the wound.

Next day he removed an ovary and tube from a young woman, although he told me that his experience with conservative surgery was far from satisfactory. In cases in which he had cut out the half of one ovary they had suffered for many years afterward from cicatricial contraction in the portion that was left, while in cases in which he had removed the uterus for fibroid, leaving the ovaries, the latter had, within two years, completely atrophied. Moreover, he said that since we had ovarian extract at our command, we no longer have anything to fear from the artificial menopause. To every woman in whom this occurs, he gives extract of cow's ovaries every morning in a glass of port wine, which makes it so palatable that they do not know they are taking it. He says he has never cured insanity with it. The next day he removed tubes and ovaries from a woman whose peritoneum was covered with miliary tubercle, which he said he had several times seen cured by laparotomy. He allows his patient to eat heartily the day before the operation, but not for several days after. He does not fear distension of the bowels, which he says always means sepsis. He never

gives strychnine, but gives them plenty of morphine if they are in pain. He thinks that the high death rate of certain celebrated operators is due to their working at such great speed that rigorous asepsis is impossible. Next day he removed a cancerous uterus by the abdomen, first getting rid of the appendages and fundus down to internal os. He then split the cervix down the middle, so as to get his left fore-finger into the vagina, previously stuffed with sublimate gauze, rendering the removal of the cervix very easy, as he had only to cut it all round as it lay on his finger, at the same time feeling if the vagina was infiltrated. He also feels if there are infected glands in the broad ligament, and removes them. In all his work Jacobs is an artist, using his knife like a paint brush, while in his plastic work one would think he was sketching with a pencil. I had the pleasure of spending an evening with him at his palatial residence, 53 Boulevard Waterloo, full of rare works of art, and was astonished to see him and one of his assistants sit down at two pianos and play Wagner's most difficult pieces at sight, while another sang.

This concludes my series of three articles, and I trust that my effort to share the priceless privilege I have enjoyed of seeing these great men at work will be appreciated by those who cannot get away, and who must see these things through the eyes of others.

Yours very truly,

A. LAPTHORN SMITH, B.A., M.D., M.R.C.S., ENGLAND.

MONTREAL, CANADA.

"A CASE OF RECURRENT VULVAR GROWTH."

To the Editor of the Memphis Lancet:

In the August number of the LANCET there appeared an article entitled, *A Case of Recurrent Vulvar Growth*, by Dr. Wells and myself, in which I declare my belief, in spite of the microscopic examination, as to the malignancy of the case, and strongly advise the removal of the growth which had appeared since the original excision. In accordance with my advice, the secondary growth was excised by Dr. Wells, and the specimen examined by Dr. Kyle. The result of the examination was sent me by Dr. Wells, and is appended:

DEAR DR. BALDY—I enclose Dr. Kyle's report of tumor. It agrees with our opinion pretty well, I think:

Specimen—tissue from vulva. Patient—Mrs. McD. Physician—Dr. W. H. Wells. Received—June 18, 1898. Section perpendicular to the surface showed a thickened layer of epithelium, hard and dense at certain points. The papillæ were lengthened and irregular in shape, with branches extending into the surrounding connective tissue. There was distinct nesting of the epithelial cells. The connective tissue beneath showed some fibrous change, more marked in certain areas. The blood vessels were limited to the connective tissue stroma, and showed slightly thickened walls. The tissue showed no normal gland structure.

Diagnosis: Carcinoma, sub-variety—Epithelioma. [signed] KYLE.

Kindly return the report to me. Sincerely yours, W. H. WELLS.

The result is no surprise to me. It is only what I have seen many times in my experience, and it only adds the more to my conviction that it is a gross mistake for a physician to be led blindly by our laboratory colleagues. A wide clinical experience is worth more than all the microscopes ever invented. By this I do not mean to deny the value of the microscope as one aid to the physician, but I do mean to protest against the habit which is growing so universal of trusting all to this instrument to the neglect of a close clinical study of the case.

If, after an exhaustive clinical study of a case the microscope agrees with the conclusions forced upon one by the symptoms, well and good; if it opens our eyes to something heretofore not suspected, better still; but if it decries that which is clearly indicated clinically, then it should be looked upon with suspicion. In this event, if the case be one in which waiting and watching will do no harm, wait and watch; if, however, action be important to the future outcome of the case, then, without hesitation, I say ignore the microscope and proceed on the clinical facts. All the laboratory work in the world will not take the place of clinical data well gathered and well weighed. It is becoming too fashionable to place all reliance on the laboratory, and therein, I believe, lies one of the future dangers in medical advance, especially amongst the younger members of our profession. I continually refuse to allow laboratory data to dictate my action, and expect to continue to do so, so long as it clashes with my clinical judgment. Many a time would it have led me into such error as the above case illustrates had I not had the confidence born of long clinical experience.

The tendency to abandonment of careful clinical and bedside study for that of the laboratory is the crying medical evil of the day.

Philadelphia, Sept., 1898. Very truly yours, J. M. BALDY.

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EDITORIALS.

THE HYPODERMIC USE OF QUININ IN THE TREATMENT OF MALARIA.

We are taught, and it is taught by high authorities today, that quinin is a specific in malaria. Some even go so far as to say that a fever resisting quinin is not malarial. Many practitioners in malarious districts, it is regrettable to say, have contracted the habit of calling certain forms of fever typhoid when they resist quinin and calomel for three days. All this, in our humble opinion, is misleading and unscientific—misleading, because, in our experience, it is incorrect; unscientific, because it is not substantiated by the microscope. We have no hesitancy in saying that we often meet with fevers that are not typhoid, that are malarial, that run a protracted course, and that resist quinin, no matter how given or in what amount. To assert that a fever is not malarial because it resists quinin is like saying that mitral regurgitation is not heart disease when digitalis fails to relieve it, or that luetic manifestations are not syphilitic when mercury and iodide of potash fail to cause their disappearance. Quinin is a specific in malaria like mercury in syphilis—both cure or relieve most cases, but the fact remains that they do not cure all. It quite frequently happens in the course of malarial fever that the quinin given is not absorbed by the stomach through inefficiency on the part of this organ or the high temperature present; in spite of which it is often given this way in the shape of pills, capsules or in solution. Or, if absorption takes

place, the plasmodia may remain unaffected on account of inefficient dosage, badly regulated time of administration, and quantity of the preparation used. If the stomach is tolerant, a well-made gelatin capsule or a solution of quinin in some ginger is well taken care of; pills are an unknown quantity, often passing through the intestines unchanged, and therefore unreliable. Small children cannot take pills or capsules, and their little stomachs often rebel when it is given them in solution, and as we have never experienced the slightest benefit from quinin inunctions, and as rectal suppositories, if given for more than twenty-four hours, usually set up a proctitis, we are at times in a quandary how to meet the indications in a given case; especially is this so in pernicious cases. Under such circumstances, we are in the habit of depending upon the hypodermatic method of administration, using the bi-muriate with urea, which is soluble in less than its own volume of water, in preference to all other preparatians. From one to fifteen grains may be used of this preparation, which should be injected *deep into the cellular tissue*, under the strictest aseptic and antiseptic precautions, and the point of puncture sealed with collodion. If injected into the muscles or into the layers of the skin, painful induration, sloughing, or abscess formation are almost sure to follow. We have repeatedly awaited the maturation of a crop of parasites, regulating the injection according to the history of the paroxysms and the microscopic findings, and cut short a prolonged malarial attack with a single injection. The impending paroxysm is not usually arrested by the injection, but its intensity is greatly modified; subsequent paroxysms are arrested. The patient, as a rule, confesses himself better shortly after the slight paroxysm, which may consist of chilly sensations, or a decided chill, followed or not by fever which, if present, is not high, does not last long, and is unaccompanied by that profuse sweating seen in uncontrolled paroxysms. The general aches and pains disappear, and the stomach becomes retentive. We now administer quinin per os (the hydrobromate preferred) in large doses (10 grains) every night or other night, as indicated by the history of the paroxysms, or in broken doses (2 to 5 grains) in capsule or solution at intervals throughout the days of expected paroxysms. This insures the destruction of any organisms that may have escaped on account of tardy or delayed segmentation.

In multiple invasions, two or more injections may be necessary, the dose to be regulated according to the weight of the patient. We have repeatedly injected three or four grains in infants weighing twenty and twenty-five pounds, with the most gratifying results. Patients occasionally tell us they cannot take quinin on account of the intolerable headache, urticaria, nervousness and sick stomach which it produces, and yet stand injections of large doses perfectly. We never tell such patients that we are giving them quinin, and the injection itself dispels any doubts that may be left in their minds; they do not, and need not know that it is given them hypodermatically. Arsenic, in ascending doses, and albuminate or peptonate of iron are valuable adjuncts in the after-treatment.

THE NEED OF A STAFF AT THE CITY HOSPITAL.

It was given out by those in a position to know that the city hospital would be placed under the medical care of a staff of visiting physicians and surgeons as soon as the new buildings were ready for occupation. That is accomplished, but as yet no staff has been appointed, nor seems likely to be. We venture to say that no other city of this size has its hospital under other than a medical staff, so far as the attention to the sick goes.

The trend of today is toward specialism. The general practitioner has, and always will have, his place, but the men who can give proper attention to medical, surgical, gynecological, obstetrical, neurological and eye and ear cases alike are so few and far between that they may be said not to exist. To expect one man to do all this in a hospital of one hundred or more beds, and to manage the institution's finances and domestic economy, as well as to attend to his private work, is to cast an overwhelming burden upon him. We do not mean to reflect on the present incumbent or his work. So far as we know he is doing as well as could be expected, and far better than any of his predecessors, but we are of the opinion that the medical administration of the city hospital is not in keeping with its modern appointments. The buildings and equipments are such as to command our admiration, but from a casual observation of the workings of the institution, there are a few things in which its administration is short of what it should be. The principal sin

of omission is in the point of case records. Full histories of cases, with accompanying temperature and treatment charts, should be carefully kept, for medico-legal, if for no other reasons. We think this is not done because the physician in charge has not sufficient time to attend to it. Now, the details of a case depend for their preservation on his memory, which, in the case of any man, is apt to prove inadequate when the nature of an injury, its treatment and result are at issue in a suit for damages. A staff of visiting physicians could, by the division of labor, give this matter proper attention. A natural sequence of the appointment of a staff would be the separation of patients, as far as possible, into appropriate wards—that is, medical wards, surgical wards, etc. This would be difficult here where the negroes and whites must also be kept in separate wards, and doubtless, under the present system, will be in a measure accomplished as the workings of the institution acquire the smoothness which time will bring.

We notice that the catalogue issued by the Memphis Hospital Medical College announces clinics at the hospital for the coming winter. We would infer from this that their influence will be cast in favor of a staff, on which the college will be represented, otherwise their clinics can only be held at and during the pleasure of the hospital physician. One of the functions of a hospital, especially when in a community which contains a medical school, is that of an educator. We believe that this function can be best developed by assigning the patients to the care of men who, by aptitude, cultivation and inclination, are best adapted to study and to deal with their particular diseases. They would *study* them. The result of these studies would be published to enrich medical knowledge, and further aid us to combat disease. On the one subject of the Southern fevers enough material finds its way to this institution to develop, if properly applied, a Thayer or a Dock in our midst. That the material is not utilized is evidenced by the fact that no creditable medical study has ever been published from this hospital, and for several years none of any sort has appeared. Even the customary annual report, issued by the most unpretentious hospitals, is lacking from this one. A report is issued, but is mostly of a financial nature, dealing with patients simply as numbers admitted, etc. Much valuable statistical information is thus lost. We regret that Dr. Billings' report to the City Council on the sub-

ject of plans for the buildings did not include an appendix on the subject of Vital Statistics.

As taxpayers, whose money helped to build this institution, whose money sustains it and pays the salary of its employees, as citizens interested in all that is good in Memphis, and as physicians who deplore the fact that opportunities are being neglected, we assume the right to criticise and to proclaim the need of a medical staff at the city hospital.

THE QUARANTINE QUESTION.

One of the daily papers has lately been waging war on our present quarantine system as antiquated, unwise and unnecessary, and thinks we should pin our faith to sanitation, isolation and fumigation as the means of protecting ourselves from contagious diseases in general, and yellow fever in particular. A weak point in this plan of dealing with yellow fever is found in the fact that many cases of the genuine disease, highly contagious, are so mild as not to excite a suspicion, and this is especially true when the disease first develops, and we are not so alert regarding the nature of every acute fever. These cases cannot be positively diagnosed, and would escape isolation and other precautionary measures, but would sow the disease broadcast. Again, a person from an infected district would carry the contagion in his clothes and spread it long before he himself showed symptoms of the disease. The paper which takes this view of the matter is rarely on the wrong side of any public question, but in this instance it does not agree with what we think is the opinion of the physicians, and as their spokesman we wish to express ourselves on the subject.

We agree with the *Scimitar* that an annual quarantine will be a great disaster to the city, but we are confronted with a choice of evils. Yellow fever should be kept out of the United States by a maratime quarantine under government control. When, for lack of, or in spite of, such a system, fever appears in the country south of us, we must keep it out of Memphis, for as soon as it appears, the country on which we are commercially dependent will quarantine against us so tightly that all business will be completely suspended. With our climate and other conditions, with the atmospheric impurities found in this and all cities, if yellow fever is brought

here at a season favorable to its development, it will become epidemic—not like it was in 1878 perhaps, but nevertheless epidemic—and this in spite of all the sewers that could be put underground, and all the brick and granite pavements that could be laid over them. We heartily favor sewers as essential to the health of the city, and as the only means of protection against many contagious diseases, of which yellow fever is not one, but of which typhoid fever, diphtheria and others are samples. But the people and papers of this community may as well realize once for all that neither sewers nor anything else except Providence, will prevent the spread of yellow fever introduced here in a season favorable to its development, and our immunity from it depends upon the prevention of its introduction. For this reason we favor a quarantine, and approve of the course of the Board of Health. We believe this to be the unanimous opinion of the doctors, and we hope the *Scimitar* will abandon its position, which is detrimental to the good of the community, and at variance with the lessons of experience.

THE YELLOW FEVER SITUATION.

The local outbreaks in remote villages this year furnish another lesson in the prophylactic management of this scourge. There seems to be little doubt that this is a second year fever—that is, infection developing from unrecognized cases scattered from larger centers of infection last year. Both the clinical character and the lesser disposition to spread favor this hypothesis. The only way these second-year outbreaks can be prevented is to be on the lookout for the first cases. When the presence of a case of yellow fever in a community is once reported, defensive measures are then adopted by threatened communities, even before the quarantine at the point of infection is in working order. It is a wise strategic move to close down against the world when in doubt. As soon as the situation is understood, the measures at the point of infection, if under the rules of the Atlanta Convention, should be sufficient guarantee of safety to allow intercourse, with the usual restrictions of a scientific train and freight inspection, fumigation, relays, detention camps, etc.

As to a quarantine against unknown danger, the present method of the local authorities may be deemed as efficient as possible with

the means and working force at command. Ninety-nine per cent. of the efficiency of a land quarantine may be ascribed to its moral effect. Very few people would care to incur the trouble and annoyance incident to running a quarantine blockade when there are other places wide open and ready to receive them.

With the lesson of '97 before us, it will probably be many years before yellow fever will be again introduced into the United States. It is doubtful if the fever now prevalent will wait for frost to put an end to it.

THE MEMPHIS LANCET PRIZE.

The MEMPHIS LANCET has offered a prize of twenty-five dollars in gold for the best paper on a medical or surgical subject, including the different specialties, read before the Memphis Medical Society between October 1, 1898, and June 1, 1899, under the following conditions:

1. The editors of the LANCET, inasmuch as they will be the judges of the contest, are not eligible to compete for the prize.

2. All papers entered for this prize must be turned over to the secretary at the meeting at which they are read, endorsed, "*Entered for the Memphis Lancet Prize*," and transmitted by the secretary to the MEMPHIS LANCET.

3. The LANCET is to have the refusal of all papers entered in this competition for publication.

4. In case no paper is submitted that is worthy of award, the privilege is reserved of withholding it.

The purpose of this offer is to stimulate interest in the Medical Society, and to encourage the presentation of creditable papers. We will always be found ready to do our part to promote the welfare of the profession in Memphis and the vicinity, and this is but a mild expression of that attitude. The prize will probably be offered annually, and increased as circumstances justify it.

"THE RIGHT MAN IN THE RIGHT PLACE."

Those are our sentiments in regard to Dr. Heber Jones, the President of the Board of Health. In the anxious times from which we have not yet fully emerged, when we were in daily fear

of the development of yellow fever in the city, his conduct of the Health Department, ably seconded by the other health officials and the municipal authorities, has been so energetic, so watchful, so firm, as to inspire the community, both lay and professional, with confidence, and an abiding faith that all that a strict quarantine could do to protect us from invasion would be done. The city is certainly to be congratulated on having such a man at the head of the Health Department in such a time as the past month has been. We tip our hats to you, Dr. Heber Jones. May you live long and prosper.

REPORTS OF SOCIETIES.

MEMPHIS MEDICAL SOCIETY.

STATED MEETING, SEPTEMBER 6, 1898. DR. T. J. CROFFORD, President.

Dr. F. A. Jones presented a patient for diagnosis. A colored man, 41 years of age, a molder, had the grippe in the fall of 1894. Following this he had acute articular rheumatism and was confined to bed for five weeks. Then he became jaundiced, his abdomen swelled, he had pain in the right iliac fossa and edema of the feet. There was no malarial history, but he had syphilis ten years ago. With the exception of the symptoms enumerated he has been quite well. The liver and spleen are much enlarged, the liver especially so. No examination of the urine or of the blood has been made. The possibilities are hypertrophic cirrhosis, probably syphilitic, leukemia and malaria.

Dr. Jones read a paper entitled "*Where Are We At?*" The paper was in praise of the work of the clinician and disparaging to the work of the pathologist, whom the writer characterized as simply a follower after the clinician, and not a leader. He spoke of the disappointing results of microscopical and bacteriological research, and the small practical utility of serum therapy and of the X ray in medicine. He said that we were much at sea on many important subjects in medicine.

Dr. M. Goltman, in refutation of what Dr. Jones had said in regard to the X ray, mentioned its value to him in the diagnosis and treatment of fractures. In an old lady of 65 he had set a fracture under

its use, and the result was perfect. He was enabled to detect in another instance a dislocated finger, complicated by fracture, in which only the fracture had been recognized. In another case, a fracture of the nasal process of the superior maxillary bone was diagnosed and operated on with a good result.

Dr. E. C. Ellett reported a case on the same line, the patient being shot in the face with bird shot. There was great swelling of one eyelid, and this lid was perforated by two shot. Dr. Goltman made an X ray examination, and it could be easily seen that one shot was lodged in the lid and the other had penetrated the eyeball. The patient has not yet been operated on.

Dr. F. D. Smythe has had some very satisfactory results with the X ray in cases of foreign bodies, and he can appreciate what a help it is in fractures. In New Orleans it is the custom now to set all fractures under the X ray.

Dr. Richmond McKinney thought Dr. Jones was mistaken in thinking that the mercurial treatment was combined with the use of antitoxin in treating diphtheria. He was sure that in the German hospitals they rely on antitoxin alone.

Dr. Jones said that Dr. McKinney had misunderstood him, as he plainly said that in the hospitals the antitoxin was used alone, but in private practice mercurials and stimulants were also given to help the antitoxin out.

Dr. Smythe read a paper on *Two Cases of Syme's Amputation.* The first case was that of a negro brakeman, whose foot was crushed by a car. Syme's amputation was done, and drainage obtained by gauze inserted through the side incisions. The flaps sloughed, and a re-amputation seemed necessary, but was deferred, and ultimately a good stump resulted. By means of an artificial limb, a very serviceable leg was secured. In the second case, the operation was done for tubercular disease of the tarsus and metatarsus. In this case primary union was secured, with an excellent stump. In Syme's amputation no bone is left to necrose, and a useful stump results.

Dr. G. G. Buford saw the first patient, and was very much surprised at the ultimate result, considering the extensive sloughing which he thought would necessitate re-amputation. He asked Dr. Smythe what caused the hole in the heel flap just over the end of the bone.

Dr. S. E. Rice asked if the drainage from the side was Syme's idea. He had seen it used three times without success.

Dr. Smythe explained that the hole in the heel flap was caused by a nail being driven through the flap into the end of the bone to hold the flap in place, a method used by Matas of New Orleans. The drainage from the side is not Syme's idea, for he recommends perforation of the heel flap for drainage. Dr. Smythe was loth to re-amputate in his first case because he wanted to secure the Syme's stump, which he regards as superior to all others.

Dr. McKinney read a paper on *Papillomata of the Nasal Cavity, with the Report of a Case.* After reviewing the literature and calling attention to the rarity of the condition, the writer reported a case of papilloma of the septum in a young man. The growth was high up on the anterior portion of the septum. It was removed with a cold snare, and the base cauterized. Microscopical sections, which were shown, proved the growth to be a soft papilloma.

Dr. Ellett mentioned a case in which he removed a growth, having the macroscopical appearance of papilloma, from the septum of a boy of 15. He had submitted the specimen to Dr. Krauss, but it was spoiled in imbedding. Dr. Ellett spoke of the small importance to be attached to macroscopical diagnoses of these tumors.

Dr. Smythe asked if these growths in the nose differed from papillomata elsewhere, and why the nose was so free from them.

Dr. McKinney said that the papillomata partook of the character of the epithelium from which they sprung, but he was unable to explain their rarity in the nose, unless it was that the necessary irritation was not present.

Dr. Ellett suggested that the hard variety was not found there often on account of the absence of squamous epithelium from the greater portion of the nasal cavity.

Dr. Ellett presented an *Auxiliary Skiascope* for facilitating the use of skiascopy at one meter as a confirmatory test. The instrument is a hard rubber disk, carrying a plus one-quarter, plus one-half, plus three-quarters and plus one D. lenses. This disk is fastened to the trial frame, and rotates in such a manner that the lenses are stopped in front of the pupil of the eye under examination. It is used by first correcting the refraction in the ordinary way under a mydriatic, and then, with the lens which corrects the meridian

under test before the eye, and the surgeon throwing the light into the eye from a distance of one meter, the disk is rotated by the patient turning the lenses successively in front of the eye. When the plus one D. lens is in position, the shadows should reverse. An earlier reversal indicates over-correction. If they do not reverse with the plus one D., the correction is too weak. In simple myopia and hyperopia, all meridians are corrected at once, but in astigmatism each must be corrected separately. Dr. Ellett presented the instrument as an aid to the test lenses and trial frame, and not as a complete skiascope.

Dr. Smythe reported the case of a boy 8 years old, with *Two Glandular Tumors in Scarpa's Triangle.* The condition was of four weeks duration and had been treated by hot applications under the direction of a homeopathic physician. There was no pain, but there had been a little fever. The glands were removed, the dissection being carried quite deep, as enlarged glands were found as deep as Hunter's canal. One gland contained a cheesy center.

Dr. Smythe had not yet had a report from the pathologist to whom he submitted the specimen, but thought the trouble was either tubercular or sarcomatous. (Microscopical examination has subsequently shown the growth to be a lympho-sarcoma.)

Dr. A. B. Oliver asked if there was any possibility of a venereal disease being the cause. He had recently removed some glands from the groin of a young woman of 24. The trouble was of three years duration and the mass was cheesy in the center.

Dr. Buford saw a patient some time ago who presented a somewhat similar condition from direct traumatism. In this instance an abscess formed which ruptured into the bladder. Glandular enlargements of the neck are also troublesome. He has under observation now a child whose cervical glands are enlarged and who has been operated on twice for their removal, but there are still some present.

Dr. Rice said that tubercular disease of glands was usually bilateral, though it might be unilateral. Malignant disease of the glands is rarely primary, but usually appears near and secondary to a malignant growth of other tissues.

Dr. Goltman had seen the specimens from Dr. Smythe's patient, and while the history points to a tubercular trouble, he thinks from the appearance of the glands that the condition is melanotic sarcoma.

Dr. Smythe said that while most of these glandular troubles occurred in strumous individuals and were tubercular in nature, we recognize a bubo which is not a venereal bubo, and, as far as we can see, has no cause. It is usually seen in laboring men, and not associated with any wound or other cause. It sometimes breaks down.

MEMPHIS PATHOLOGICAL SOCIETY.

STATED MEETING, SEPTEMBER 2, 1898. DR. E. C. ELLETT, President.

Dr. Wm. Krauss exhibited cultures and *stained specimens of pus* from a patient with the following history: A young man, about 20 years of age, received a slight injury about the rectum from riding his bicycle, which resulted in some discharge. Examination revealed two incomplete fistulæ. They were thoroughly laid open and scraped, effecting the closure of one, but the other, on the right side, extended so far back toward the sacrum that osteo-tuberculosis suggested itself. The opening was enlarged by cutting, and most thoroughly curetted several times, but refused to heal. The pus submitted to Dr. Krauss for diagnosis revealed no bone elements, and no tubercular bacilli. A stained slide showed what appeared to be the bacillus coli communis in pure culture. A bouillon inoculation showed definite clouding, and a boiled potato inoculation showed a raised yellow streak, which is quite different from the invisible growth seen in typhoid inoculations. Dr. Krauss gave it as his opinion that the disease was the result of pure colon infection.

Dr. M. Goltman asked the points of differentiation between colon and typhoid infections, and how the diagnosis of colon infection would affect the prognosis in the case.

Dr. W. W. Hamilton asked how the disease could be eradicated after pure colon infection had been diagnosed.

Dr. Krauss, in closing, said there are many methods for differentiating typhoid from colon. The simplest is the Widal test. The Eberth bacilli only react to blood of a case of typhoid fever or one who has had it. Colon bacilli are not so affected. They also grow more rapidly on the media generally used. They grow on formalin bouillon, ferment glucose, coagulate milk, produce indol, grow on asparagin-glycerine, all of which the typhoid bacilli

do not. The bacillus icteroides reacts only to yellow fever blood, does not coagulate milk, but *does* ferment glucose and has the invisible potato growth like the typhoid. Dr. Krauss has recently isolated the Eberth bacillus by the Hiss media, and was much pleased with it. It is significant that the patient had been on the guaiacol treatment.

Infection in this case might have been from the outside, but more likely there is, or was, a communication with the bowel higher up, which would require extensive dissection not warranted by the subjective symptoms. He would give nature a chance before doing an extensive operation. Iodine and strong antiseptics had been injected without benefit.

Dr. Goltman presented a specimen of blood, double stained, showing *double tertian malarial invasion*. The patient, a boy of 7, was suspected of having sinus thrombosis. The organisms are typical tertian parasites, and fresh segments are seen in nearly every field; in some fields they are seen in the grouped condition. Numerous small hyaline unpigmented parasites are seen, as well as large unpigmented bodies. There are daily exacerbations of fever, which would reach 106° and over. The diagnosis of malaria was doubted, because 110 grains of quinin, given during a period of seventy-two hours, did not relieve the symptoms. Dr. Goltman said it was difficult, if not impossible, to get absorption of quinin from the stomach in the face of such high fever. In such cases, reduce the fever by baths and phenacetine, and give quinin (bimuriate with urea), under proper microscopic control, hypodermatically, according to indications. There is a time when to give quinin and when not to give it. To give it when the parasites are in the small hyaline unpigmented stage was waste of good medicine and a discomfort to the patient. The administration of the quinin should be regulated according to the history of the paroxysms and the microscopic findings.

Dr. E. E. Francis related the case of a little girl who, during the winter months, passed through a siege of typhoid fever, in the third week of which she contracted an intermittent fever, which was clearly malarial, as shown both by the clinical history and the microscopic findings, yet it resisted quinin for a number of days. Arsenic was then used and effected a cure.

Dr. S. E. Rice called attention to the fact that the majority of

the authorities are unanimous in saying that fevers resisting quinin are not malarial.

Dr. Hamilton asked when was the right time to give quinin. He thought quinin merely paralyzed the spores without killing them. Arsenic is his remedy in all malarial affections.

Dr. J. H. Venn said the right time to give quinin was just at or before the budding stage of a parasite.

Dr. Krauss said there was undoubtedly a form of malaria in this section, evidenced by a small extra corpuscular hyaline body, which resisted quinin. This little organism had its prototype in the crescents seen in the other localities, but not in this. Dr. Krauss had examined the blood of Dr. Francis' patient. She originally had typhoid, which was later followed by a double tertian invasion. He emphasized the fact that, unless clearcut paroxysms prevailed, quinin was useless, and to say off hand that because a certain fever resisted quinin it was not malarial, was both dogmatic and unscientific. The very authorities who make such statements do not even tell us when, how and what quantity to give in a given case.

Dr. Goltman, in closing, agreed with Dr. Venn as to the time when to administer quinin. He drew attention to the fact that there was almost an entire absence of leucocytes in the slide presented, and as there had been a similar absence of septic symptoms, he felt positive of his diagnosis, in spite of the fact that 110 grains of quinin had not afforded relief. He said that in all the blood he had examined while in Memphis he had never seen crescents, but had seen the little bodies referred to by Dr. Krauss, and knows that they are unaffected by quinin. He quoted Van Marter who, after an extended experience and study of the subject, both here and abroad, was forced to the conclusion that quinin was not always a specific in malarial fever.

Tonsillotomy—When and How to Make It.—J. M. Crawford (*The Laryngoscope*, September, 1898) says that tonsillotomy should be resorted to when the tonsils project much beyond the faucial pillars, especially when aural catarrh exists or the lacunæ are inclined to inflame from caseous collections. There is nothing in the common idea of a tonsillotomy affecting the voice or the procreative function. He prefers the tonsillotome (McKenzie's) to the bistoury as less likely to cause bleeding, because the operator can see what he is cutting, because it leaves a smooth cut surface and it is less painful. If hemorrhage occurs the cautery should be applied to the bleeding point if it can be seen, and if not a pledget of wet cotton or a wet sponge should be pressed against the cut surface with the fingers. The author claims the last method as original.

PROGRESS OF MEDICINE.

The Misuse of Colostomy.—Charles B. Kelsey (*Med. Record*, July 9, 1898) says, whether the disease in any particular case be a proctitis due to catarrh, dysentery or tuberculous deposit, makes no difference in the treatment now to be advocated. Colostomy is never curative any more than dilatation and incision has been before it. The artificial anus is generally a source of constant annoyance and requires constant attention. The bowel is liable to prolapse, ventral hernia is not uncommon, and erosion or ulceration of the exposed mucosa is often present. After a consideration of these points and the advance of pelvic surgery in the last fifteen years, Dr. Kelsey, although having been a pronounced advocate of colostomy, has come to limit its applicability to inoperable cancer, and in all other cases, whether of malignant or non-malignant ulceration, to recommend a direct attack upon the disease itself through the posterior incision (Kraske's operation).

As to the comparative dangers of the two operations Dr. Kelsey says there is no question that colostomy has the advantage, but still the mortality of the Kraske operation is nothing like it used to be since it has grown to the present perfection of technique. It has become as much an operation of precision as abdominal hysterectomy, and attended by no greater mortality. In his last twenty-five cases Dr. Kelsey only lost one, the patient dying of a weak heart. He claims that the mortality ought not to be over five per cent. in the hands of experienced operators, and says there can be no discussion as to the comparative comfort of two women, one having an ulcerated rectum and artificial anus in the groin, and the other who, having undergone the operation of excision, has a useful anus in the perineum.

Early operation, he claims, means easier operation. After stricture and other deeper-seated pathologic processes have once formed, it was useless to go on with topical applications, with bougies, divulsions and nickings. The radical operation should then be proposed. In the preparation of the patient Dr. Kelsey recommends the anus to be plugged with iodoform gauze previous to the

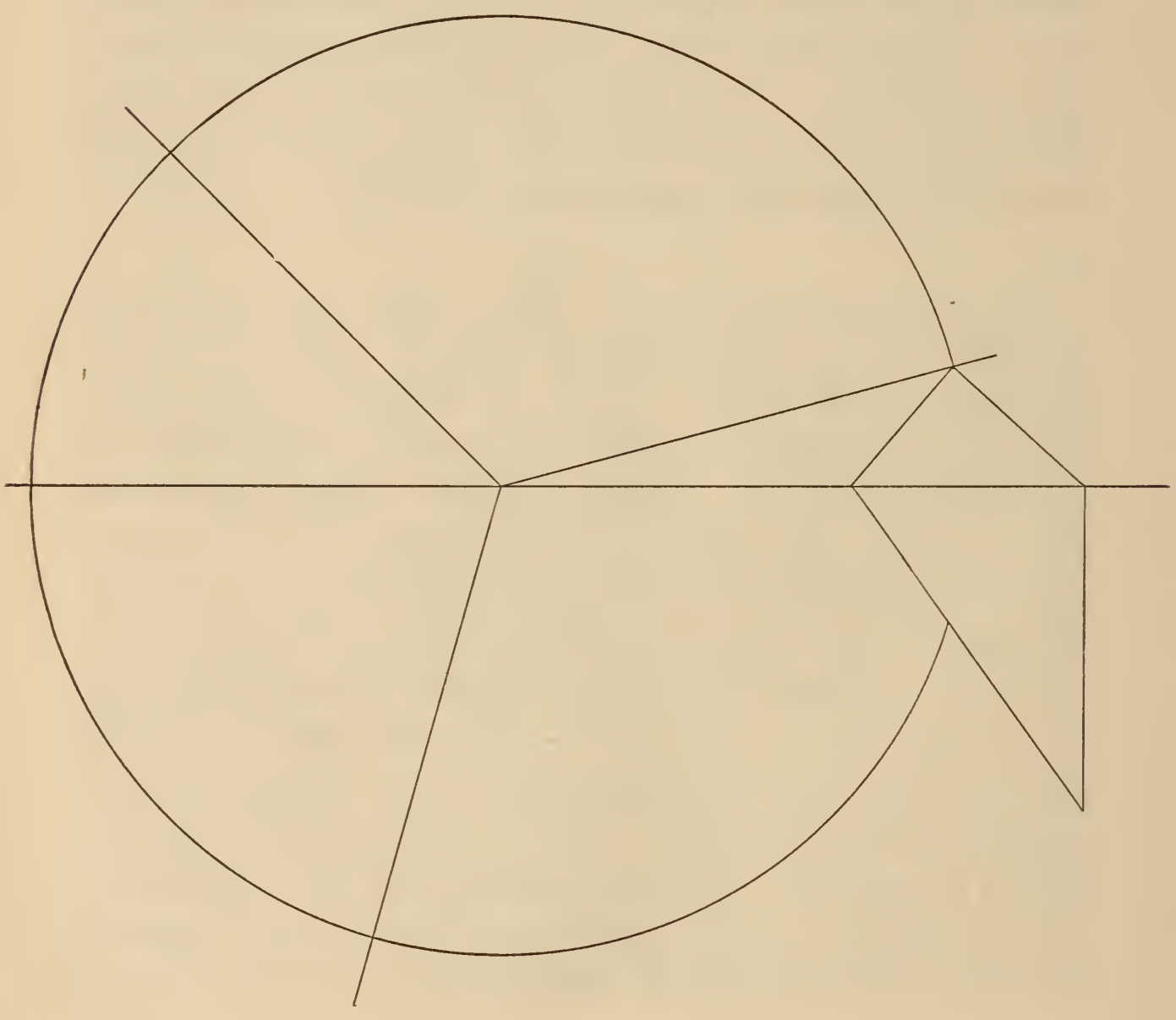
operation, and by sewing this into the rectum by a purse-string suture around the anus, escape of intestinal contents into the wound is avoided. He examines the tubes and ovaries through the Kraske incision when operating on women, and does any work upon the adnexa that seems strongly indicated.

He concludes that in general terms the operation is indicated in all non-malignant ulceration and stricture of the rectum; that the operation is not followed by "good sphincter control" any more than is colostomy, but the anus is where nature placed it, and often of enough power to prevent the escape of a solid passage for sufficient time to allow the patient to seek the closet.

[From what we have seen of the Kraske operation performed by one of the best surgeons in the country, it is a most bloody and tedious undertaking. The ability to remove all diseased tissue and a naturally-placed anus, which is always crippled, however, are undoubtedly considerations, but the fact remains that the operation in the hands of most surgeons is difficult, dangerous, tedious and bloody. We would consider the gauze drain an element of considerable danger to the peritoneum.—M. G.]

The Treatment of Dropsy.—James Tyson (*Ther. Gaz.*, Jan. 15, 1898) sums up the treatment of obstinate dropsies, no matter of what origin, as follows: After rest and dieting the patient, Rochelle salts, comp. jalap powder or calomel, is given until free purgation is established. Enemas of Epsom salts can be employed if the exhibition of drugs by the mouth is not borne or fails to act. Following this purgation, diuretics are employed. He places tr. digitalis in large doses first, then theobromin (45 grains a day). Strophanthus in large doses is efficient; with caffein he has been disappointed. The pill of calomel, digitalis and squills (Neimeyer) has at times given excellent results. The elimination by the skin is less satisfactory. The means of securing diaphoresis named were, hot packs, vapor baths, Schott's method of carbonated baths, resistant exercise and massage. The only drug which he considers efficient is pilocarpine, with or without artificial heat. The danger of edema of the lungs is practically done away with by the use of atropine. Finally, mechanical tapping.

The Optical Functions of the Lens.—Dr. J. C. Sullivan of Cairo (*St. Louis Med. Review*, Aug. 27, 1898) endeavors to demonstrate that the blind spot in Marriotte's experiment is not due to the circular optic disc, but to a quadrilateral trapezium, formed by the tripartite lines of the lens. The measurements for its construction vary with the distance of the object viewed. A circle is drawn whose *diameter* measures one-fourth ($\frac{1}{4}$) of the distance viewed on its transverse diameter, to the right or left, whichever is chosen. A point one-fourth ($\frac{1}{4}$) the measure of the *radius* is placed inside the circumference, and another the same distance outside. Fifteen degrees (15°) above on one-fourth ($\frac{1}{4}$) the *radius*, the apex is marked, and diagonally downward and outward the length of the radius to a point marked directly below the outer point. Lines connecting these points describe the evanescent angle, as shown in the cut,



which was drawn from 16-inch distant view. Whereas, were the optic disc the cause of the blind spot, there should be a circle 406.4 m. m.×1.8 m. m.÷15.6 m. m.=46.89 m. m.÷25.4 m. m.=1.8 ins. in diameter, which facts give food for thought and stimuli to further investigation. When we remember the many anatomical and surgical angles through which the surgeon may enter the body with impunity, who can say at no distant future, a saturated trapezium attached to the positive, whilst the negative electrode of a battery is placed over the base of the brain and angular gyri, in the hands of an educated and experienced electrician and ophthalmic surgeon, may not be the mode of treatment of cataract or opacities?

Diphtheria Antitoxin—Report of the London Clinical Society's Committee.—This committee was appointed in 1895, and determined to conduct the inquiry as follows: 1. To test the effect of antitoxin on the mortality of diphtheria. 2. To analyze the evidence obtained as to the effects of antitoxin in proportion to the quantity administered; (*a*) on the course of acute disease; (*b*) on the complications and sequelæ. 3. To note any other effect of antitoxin.

Eight hundred and thirty-two cases were analyzed and tabulated. Out of these 199 cases had to be rejected from defects of evidence or imperfect statements, leaving 633 for further analysis. The cases were grouped according to the seat of the membrane, and the effects of the remedy noted as to mortality, extension of membrane to the larynx, paralysis, symptoms caused by the antitoxin, and conditions under which death occurred.

The general result of this inquiry shows that in cases treated with antitoxin not only is the mortality notably lessened, but that in fatal cases life is prolonged. The injection may produce rashes, joint pains and fever, but no other prejudicial effect after even very large doses. As to mortality, the cases were arranged in two series—one in which the whole of the antitoxin administered was injected within the first forty-eight hours of treatment; the other in which it was continued longer.

Of the laryngeal cases, one-half escaped tracheotomy—a much larger proportion than under any other known treatment. Of the tracheotomies performed, only two were done after twenty-four hours from the first injection. Further, the mortality of the trach-

eotomies was only 36 per cent., which compares very favorably with a series of records from the general hospitals before the introduction of antitoxin, and which amounted to 71.6. The effect of age seems much the same as under other treatment. The lessened mortality appears to depend on the lesser frequency with which the membrane extends to the larynx under the influence of antitoxin. The total mortality of the 633 cases amounted to 124—19.5 per cent. as against 29.6 in the hospital series before antitoxin.

The duration of life in fatal cases was prolonged, a fact to which the committee draws attention in reference to the occurrence of paralysis. As to this, the closest investigation failed to show any connection between the occurrence of paralysis and the amount of antitoxin injected, or the period of the disease when it was used. Rashes were observed in about one-third of the cases, chiefly erythematous or urticarial, but in no instance had they any bearing on the ultimate result. Joint pains were noticed in a few cases, nearly all of which had a rash and some fever. In some cases a rise of temperature occurred during convalescence, without either rash or joint pains. Suppression of urine was in the same percentage with and without antitoxin.—*Medical Record*, *July* 2, 1898.

A Plausible Method of Vaccination Against Yellow Fever. Charles Findlay, of Havana (*Phil. Med. Jour.*, vol. 1, no. 24), writes of a process of immunizing against yellow fever. Selecting a person from whom all traces of the fever have disappeared for four or five weeks, he raises a blister on the arm or chest by painting over the place selected several layers of cantharidal collodion, and covering this with a heavy gauze pad, bound down at the edges with collodion. In eighteen to twenty hours he removes the pad and takes up from the unbroken blister two to four drops of serum in a sterilized hypodermic syringe, and injects it into the person to be immunized. This serum should be obtained from those who have had the severer types of disease, if a choice of cases is possible. The blister serum is preferred to blood serum in the hope that living leucocytes will be transmitted in the blister serum and propagate their special form, thus giving greater immunity. Thirteen artillerymen were thus inoculated at various times, and while under observation for periods of six to twenty months, none of the thirteen contracted the disease, although their companions around

them suffered from it. It was tried as a curative agent on three cases. One recovered, and some good effect was thought to be due to the injection, though the patient was kept on the regular treatment. It was applied tardily in the other two without effect, both of them dying.

A Study of Alcohol, Tobacco, Coffee and Tea as Causative Factors in the Production of Nervous Disorders.—Charles E. Lockwood (*N. Y. Med. Jour.*, July 2 and 9, 1898) says that the pathological changes of the nervous system produced by the habitual excessive use of *alcohol*, are degeneration of the nerve cells of the cortex of the brain, the vaso-motor centers of the bulb and cord, parenchymatous and interstitial inflammation of the nerves, and arterial degeneration, with hyperemia and chronic inflammatory conditions. These give rise to the following cerebral diseases: 1. Delirium tremens; 2. Alcoholic mania; 3. Mania of exaltation; 4. Acute transitory mania, which ends, after a few hours, in a heavy sleep; 5. Alcoholic dementia, the result of organic degeneration of the brain, produced by the continued action; 6. Dipsomania; 7. Acute melancholia.

The result of the study of *tobacco* as a factor in the production of nervous disorders is, that tobacco in toxic quantity acts as an irritant, depressor and paralyzer of the functions of the nerve cells of the cerebrum, cerebellum, and nerves of special sense, medulla oblongata, spinal cord and sympathetic and vaso-motor systems, producing various functional nervous disorders, and that the only anatomical lesion of nerve tissue which is now maintained to exist as the result of tobacco poisoning is retrobulbar neuritis of the optic nerve.

As a causative factor in nervous disorders, we can say that the role of *coffee* is that of a stimulant or depressant, varying with the amount, strength and time at which it is taken, and the condition and susceptibility of the subject. It causes insomnia and restlessness, fulness and heaviness of the head, disorders of special sense, as flashes of light before the eyes and ringing in the ears, frequent irregularity and intermittence of the heart's action, and muscular tremor.

Tea, in moderate doses, is a stimulant to the nervous system, and in excess a depressant to the functional action of the nerve

cells of the cerebrum, medulla, spinal and vaso-motor systems; and the nervous disorders produced by its use, differing in different cases and under different circumstances, such as age, climate, susceptibility, temperament and general constitutional conditions, are such as are due to over-stimulation and depression, the result of the reaction following over-stimulation of the various nerve centers, and may be grouped as follows:

1. Insomnia and restlessness, partly through its stimulating action on the brain cells and partly through stimulation of the pulse and respiration, as a subsidence of respiration is necessary to sleep.

2. Headache, vertigo, ringing in the ears, flashes of light, mental dullness and confusion, apprehension of evil, with exhaustion of mind and disinclination to mental exertion.

3. Increased and irregular action of the heart, increased respiration, muscular tremor, "nervousness," disinclination to physical exertion, hyperesthesia, paresthesia, heat and flushing of the body.

Diseases of the Lachrymal Passages—Their Causes and Management.—Leartus Connor (*Jour. Amer. Med. Assn.*, July 2, 1898) concludes:

1. Among the predisposing causes of diseases of the lachrymal passages are such defects of structure as flattening of the bony canal and other irregularities, and defects of refraction.

2. Syphilis, gout, phthisis, scrofula, or any of the infectious diseases, may cause lachrymal disorder.

3. Among the local causes are conjunctivitis at the upper end of the lachrymal passage, and nasal disease at the other end, the morbid process in either instance spreading to the canal nearest.

4. The management of any case will never overlook the bearings of any constitutional disease; especially does anti-specific treatment furnish gratifying results.

5. All defects of the refraction should be corrected under a mydriatic, and muscular equilibrium assured.

6. Diseases of the conjunctiva and eyelids, as well as all nasal disease, should be removed.

7. The treatment of the lachrymal passages with antiseptic solutions, through small syringes, or the forced washing by Gould's

method, and the systematic external use of hot water, contribute to better results in all forms of these disorders.

8. The puncta should be rendered pervious, and their position against the eyeball assured, by local treatment, if possible, or failing in this, by operation, so that the ends of the canaliculi may be fully within the lachrymal lake.

9. Strictures should be located by probes, and either dilated or divided by instruments, the extent of the operations depending upon the nature of each special case.

10. Cases treated early in the disease give uniformly good results. Those attended with large destruction of tissue are less hopeful, the epiphora often remaining in spite of treatment, but they are protected against the danger of future attacks of dacryocystitis.

Surgical Interference in Cerebral Injuries Without External Lesions.—Laplace (*Phil. Med. Jour.*, April 30, 1898) reports four cases, showing the advisability of keeping head injuries, no matter how slight, under observation for twenty-four hours.

Case I. Boy, 10 years of age, fell upon a curbstone, sustaining what seemed to be a scalp wound. This was dressed, and the boy went home. In four or five hours the surgeon was sent for, and on his arrival found the patient dead. At the autopsy a large hemorrhage from the middle cerebral artery was found. Had the patient remained in the hospital it is probable the condition would have been recognized in time to have been relieved by operation.

Case II. Man, aged 40, was brought to hospital after having fallen twenty feet. He was severely contused about the body, and complained of pain in right temporal region. He rested quietly for six hours, when a numbness was felt in the right thumb, and he became quite restless. The numbness extended up the right arm and was followed by paralysis of the member. Later, numbness, followed by paralysis, occurred in the right leg, and his temperature rose to 104° F. A diagnosis of hemorrhage from the left middle cerebral artery was made, and verified by trephining. The man made a good recovery.

Case III. Man, aged 26, walked into the hospital with contusion on the occipital portion of the skull, but with no external evidence of fracture. Later there developed a rise of temperature to 103° F., jactitation and delirium, with dilatation of the right pupil. Diagnosis of cerebral contusion was made and a large trephine opening made over the site of injury. Intense congestion was found, but no hemorrhage. The wound was drained; consciousness returned next day, and he made a good recovery.

Case IV. Man, aged 26, fell from a bicycle, striking his head on a curbstone. Was brought to hospital apparently in a deep sleep. No paralysis. Symptoms pointed to severe contusion. He was trephined, the wound drained, and he made a slow but satisfactory recovery.

THERAPEUTIC NOTES.

NERVOUS DYSPEPSIA:

℞ Sodii bromid., ℥ i
Pepsin sacchar.,
Pulv. carbo. veg., āā ℥ iij
Aquæ, f ℥ iv
M. Sig.: Shake; a teaspoonful after each meal.

RICKETS:

℞ Phosphorus, gr. $\frac{2}{1\frac{1}{3}}$
Saccharin, gr. lxxvij
Essence lemon, *m* ij
Codliver oil, f ℥ iiiss
M. Sig.: Dose, a teaspoonful.

ECZEMA OF THE HANDS:

℞ Acid salicylic, ℥ ss
Traumaticin, f ℥ i
M. Sig.: Apply at night with camel's hair brush.

When the epidermis peels off, use:

℞ Oil of cade, ℥ i
Traumaticin, f ℥ i
M. Sig.: Apply at night with camel's hair brush.

WHOOPING-COUGH:

℞ Quinin. tannat., gr. xv–xxx
Ext. belladonnæ, gr. ss–ij
Lactophenin, gr. v–xx
Glycerrhizin, gr. ij
M. Ft. cachets No. x.
Sig.: One every four hours.

This makes a very palatable powder, easily taken. Dose to be adjusted according to age.

DYSPEPSIA:

℞ Tr. nucis vom., f ℥ i
Tr. cascarillæ,
Tr. cinnamonii,
Tr. gentianæ,
Tr. colombo,
Tr. rhei, āā f ℥ ij
M. Sig.: In proportionate doses.

Jules Simon.

DIABETES MELLITUS:

℞ Acetanilid, ℥ ss
Lithii carbonatis, ℥ i
Caffeini pur., gr. ij
Codeini phosphat., gr. iv
M. Ft. caps. No. xij.
Sig.: One every four hours.

℞ Arsenici bromidi, gr. j
Elixir simplicis, ℥ iij
M. Ft. sol.
Sig.: Teaspoonful 1 hr. after meals

EPIDIDYMITIS:

℞ Sodii bromidi,
Acidi boracici, āā ℈ viij
Tr. aconiti, gtt. viij
Tr. belladonnæ, f ℥ i
Liq. potass. cit., q.s. ad., f ℥ viij
M. Sig.: A tablespoonful three times daily. *White.*

A DENTIFRICE.

℞ Pulv. pot. chlor., gm. 12
Pulv. borac.,
Pulv. magnes. calc.,
Precip. calc. carb., āā gm. 28
Ess. menth. pip., gtt. 10
M. Make a powder.

GASTRIC ATONY, WITH CONSTIPATION:

℞ Orexin, gr. xxv
Ext. nucis vomicæ, gr. iv
Ext. cascaræ sagradæ, gr. v–xv
M. Ft. pil. vel caps. No. xv.
Sig.: One before each meal.

FAVUS:

℞ Floris sulphuris, 1 5
Sodii carbonatis, 4
Picis liquidæ, 50
Tr. iodi, 50
Adipis, 10 0
M. Sig.: For external use.

NEWS AND NOTES.

Dr. B. F. Turner has returned from Canada.

Dr. R. S. Stanley has returned from Europe.

Dr. Walter Stewart has recovered from his recent severe illness and is again at his office.

Medicine at the coming World's Fair in France is going to be well represented in a special department.

The library of the late Dr. R. C. M. Page has been presented by Mrs. Page to the University of Virginia. The library contains between six and seven hundred volumes.

Itinerant doctors in Iowa must pay the State a tax of $250 per year, and each city and town can likewise assess them afterward, according to a recent decision of the attorney-general of the State.

The "Review of the Work on Otology During 1897," which was to be undertaken by Dr. H. A. Alderton of Brooklyn, has been abandoned because the number of subscribers was inadequate to warrant the publication.

Dr. W. F. Blunt of Lockhart, Tex., formerly quarantine officer at Galveston, Tex., has been appointed State health officer of Texas, to succeed the late Dr. R. M. Swearingen. Dr. F. E. Daniel is to be secretary of the Board of Health.

Sanarelli, the discoverer of the alleged bacillus of yellow fever, and the originator of an antitoxin serum for the treatment of the disease, has sold his rights of manufacture to a firm in Montevideo for $30,000. This will be bad news for yellow fever patients.

Dr. L. S. McMurtry, professor of gynecology and abdominal surgery in the Hospital Medical College of Louisville, Ky., has been elected president of the faculties of the Hospital Medical School and the Louisville College of Dentistry, succeeding the late Dr. John A. Larrabee.

In Augsburg, Germany, physicians riding bicycles are given a right of way in the streets. In the place of the name plate the physician's bicycle bears a sign displaying a red cross on a white

field. In this way the bicycle is distinguished from other bicycles, and the physician is permitted to make greater speed in his calls of duty.

The program of the Mississippi Valley Medical Association has been issued. The meeting occurs in Nashville October 11–14, 1898. The list of papers is quite long and of unusual excellence, most of the well-known men in this section being contributors. The meeting will be held in the Hall of Representatives, and the headquarters are at the Maxwell House. The Lancet will be found on file at the meeting.

A woman army surgeon, Dr. Anita Newcomb McGee, has been appointed acting assistant surgeon in the United States Army, and was regularly sworn in August 29th. She has the rank and pay of a second lieutenant. Dr. McGee is a graduate of the medical department of Columbian University, Washington, in the class of 1892. Since the beginning of the war she has been in charge of the selection of the female nurses for the army.

Dr. James Tyson, professor of clinical medicine at the University of Pennsylvania, and Dr. Wm. Osler of Johns Hopkins, are mentioned as possible successors to Dr. Wm. Pepper's chair of practice of medicine, at the University of Pennsylvania. If Dr. Osler can be persuaded to return to the Philadelphia school, where he was formerly professor of clinical medicine, the University should leave no stone unturned to secure his acceptance of the chair.

The Tri-State Medical Association (Miss., Ark. and Tenn.) Owing to quarantine restrictions, the duration of which is indefinite, it has been deemed advisable to postpone the annual meeting of the Tri-State Medical Association of Mississippi, Arkansas and Tennessee, which was to have occurred in Memphis in November, to Tuesday, Wednesday and Thursday, December 20th, 21st and 22d, 1898. This being on the eve of holiday season, it is expected that the attendance will be unusually large, since many physicians contemplating a trip to Memphis for the purpose of purchasing Christmas goods may thus accomplish a dual purpose.

A Medical Law for Texas.—A committee of the Texas State Medical Association, composed of Drs. M. M. Smith, S. E. Hudson and J. L. Wilson, has addressed a strong communication to the medical profession of the State urging upon the individual members

the necessity for supporting a bill governing the practice of medicine, which is to be recommended to the next Legislature for enactment. The bill, which was unanimously adopted at the recent session of the State Medical Association, provides for the appointment by the governor of three boards of medical examiners, regular, homeopathic and eclectic, consisting of seven members each. It also provides for the examination of midwives. We trust it may meet with legislative and executive approval.

The tenth annual meeting of the Tri-State Medical Society of Alabama, Georgia and Tennessee will be held in Birmingham, Ala., October 25, 26 and 27. The following is a partial list of the papers:

President's Address—J. A. Goggans, Alexander City, Ala.

Early Diagnosis of Cancer of the Uterus—Thos. S. Cullen, Baltimore, Md.

Acute Anterior Poliomyelitis—E. D. Bondurant, Mobile, Ala.

A Case of Complete Obstruction of the Common Bile Duct by Floating Gall Stone—W. H. Hudson, LaFayette, Ala.

A Simple Operation for Hemorrhoids Without Injections, Ligature, Clamp, Cautery or Crushing—R. R. Kime, Atlanta, Ga.

Total Amputation of the Penis So That Patient Can Urinate Normally—H. M. Hunter, Union Springs, Ala.

Impotence—W. W. Mangum, Georgiana, Ala.

Extirpation of the Pancreas—H. Berlin, Chattanooga, Tenn.

Two Cases of Surgery—S. W. Purifoy, Lowndesboro, Ala.

Fracture of the Spine; Presentation of Two Cases—B. G. Copeland, Birmingham, Ala.

The Treatment of Intestinal Obstruction and Constipation by Electric Injections—R. P. Johnson, Oak Park, Ill.

Ectopic Gestation—W. E. B. Davis, Birmingham, Ala.

Modern Treatment of Corneal Opacities, with Report of Cases—M. L. Heffelfinger, Huntsville, Ala.

Keratitis—A. A. Greene, Anniston, Ala.

Purulent Ophthalmia; Report on New Method of Treatment—Frank Trester Smith, Chattanooga, Tenn.

Fevers of Alabama—Charles McAlpine Watson, Florence, Ala.

Some Fevers of St. Clair County, Ala.—Eugene P. Cason, Ragland, Ala.

Continued Malarial Fever in Southeast Alabama—Wm. R. Belcher, Daleville, Ala.

Typhoid Fever—H. Eugene Mitchell, Oneonto, Ala.

Typhoid Fever—E. A. Mathews, Clanton, Ala.

Typhoid Fever—J. D. Gibson, Birmingham, Ala.

Typhoid Fever; Report of Cases—C. L. Guice, Harris, Ala.

Some Suggestions in the Treatment of Typhoid Fever—J. C. LeGrand, Birmingham, Ala.

Diphtheria—H. L. Appleton, Cedar Bluff, Ala.

Chorea—S. W. Fain, Chattanooga, Tenn.

Conservative Gynecology per Rational Medication—R. H. Hayes, Union Springs, Ala.

Suggestion in the Healing Art—E. T. Camp, Gadsden, Ala.

BOOKS AND PAMPHLETS RECEIVED.

Diseases of Women. A Treatise on the Principles and Practice of Gynecology. By E. C. Dudley, A.M., M.D., Professor of Gynecology in the Chicago Medical College, Chicago. Pages 632, with 422 engravings, 47 of which are in colors, and two colored plates. Price, $5. Philadelphia: Lea Brothers & Co.

Nosophen and Antinosine in the Treatment of Genito-Urinary and Venereal Diseases, with Report of Cases. By Claude A. Dundore, M.D., of Philadelphia, Pa. (Reprinted from the *New York Medical Journal*, April 23, 1898.)

Grains of Experience Gleaned from Eye and Ear Practice. By E. C. Ellett, M.D., of Memphis, Tenn. (Reprinted from the *Atlanta Medical and Surgical Journal*, January, 1898.)

Acute Inflammation of the Middle Ear. By E. C. Ellett, M.D., of Memphis, Tenn. (Reprinted from the *Columbus Medical Journal*, August 16, 1898.)

Orthoform and Extract Suprarenal Glands. By W. Cheatham, M.D., of Louisville, Ky. (Reprinted from the *American Practitioner and News*, August 15, 1898.)

Glaucoma, with Detachment of Retina. By Wm. Cheatham, M.D., of Louisville, Ky. (Reprinted from the *Annals of Ophthalmology*, July, 1898.)

Ueber Hypernephrome der Niere. By Aloysius O. J. Kelly, M.D., of Philadelphia, Pa. (Reprinted from *Beitrage zur Patholgischen Anatomie und zur Allgemeinen Pathologie*, Band XXIII.)

Notes on Suicide. By C. C. Mapes. (Reprinted from *Medical Age*, September 25, 1897.)

The Importance of an Early Recognition and Treatment of Acute Inflammatory Glaucoma. By Clarence A. Veasey, A.M., M.D. (Reprinted from the *Therapeutic Gazette*, August 15, 1898.)

The Employment of Solutions of Toluidinblue as Collyria and as a Stain for Corneal Abrasions and Ulcers. By Clarence A. Veasey, A.M., M.D., of Philadelphia. (Reprinted from the *Philadelphia Medical Journal*, August 13, 1898.)

More About the Ethics of Adolescence. By C. C. Mapes, M.D., of Louisville, Ky. (Reprinted from the *New York Medical Journal*, June 4, 1898.)

Traumatic Neurasthenia. By J. E. Walker, M.D., of Hornellsville, N. Y. (Reprinted from the *International Journal of Surgery*, August, 1897.)

Addison's Disease — A Clinical Case. By R. Alex. Bate, A.B., M.D., of Louisville. (Reprinted from the *American Practitioner and News*, July 1, 1898.)

A Contribution to the Study of the Symptoms of Chronic Urethritis. By Ferd. C. Valentine, M.D., of New York. (Reprinted from the *Journal of the American Medical Association*, August 27, 1898.)

Aural Herpes. By Lewis S. Somers, M.D., of Philadelphia. (Reprinted from *American Medico-Surgical Bulletin*, October 31, 1896.)

The Use of Menthol in Pharyngitis. By Lewis S. Somers, M.D., of Philadelphia. (Reprinted from *The Laryngoscope*, August, 1896.)

Atropine Rhinitis. By Lewis S. Somers, M.D., of Philadelphia. (Reprinted from *The Laryngoscope*, October, 1897.)

Hereditary Deafness. By Lewis S. Somers, M.D., of Philadelphia. (Reprinted from *Medicine*, October, 1897.)

Eucaine Hydrochlorate as a Local Anesthetic in Hypertrophic Rhinitis. By Lewis S. Somers, M.D., of Philadelphia. (Reprinted from *The Therapeutic Gazette*, January 15, 1897.)

Adductor Vocal Paralysis. By Lewis S. Somers, M.D., of Philadelphia. (Reprinted from *The Medical News*, January 26, 1897.)

A Study of the Lingual Tonsil. By Lewis S. Somers, M.D., of Philadelphia. (Reprinted from *The Laryngoscope*, March, 1897.)

Rheumatic Pharyngitis. By Lewis S. Somers, M.D., of Philadelphia. (Reprinted from *The Medical News*, July 16, 1898.)

BOOK REVIEWS.

Dudley's Gynecology. A Treatise on the Principles and Practice of Gynecology. By E. C. Dudley, A.M., M.D., Professor of Gynecology in the Chicago Medical College, Chicago. In one very handsome octavo volume of 632 pages, with 422 engravings, of which 47 are in colors and two colored plates. Just ready. Cloth, $5 net; leather, $6 net.

Prof. Dudley has been known for several years as a prominent gynecologist and a teacher of wide experience, and the announcement some months ago that he was preparing a book on gynecology was received with pleasure by the profession. In the book before us, every expectation has been fully realized, and in the plenitude of excellent works recently issued upon a similar subject, Prof. Dudley's book will take rank with the best. The volume is brimful of information, and we cannot now recall a book of its size that will excel it in that respect. The style is concise, and at the same time clear. Liberal references have been noted, so that he who desires more information on any subject will know where to find it.

The author has departed from the usual regional classification and made one that is primarily pathological, being convinced that the reader will gain a much more useful idea of metritis, for instance, by closely associating it with vulvo-vaginitis, salpingitis, ovaritis and peritonitis, than by regarding it as a distinct and independent lesion. He believes further, that with such a logical view of diseases in their natural connection, the student and practitioner are much better equipped to understand the local manifestations, which are also satisfactorily dealt with. In this classification the author has succeeded well, and made his subject eminently clear.

The book is freely illustrated, and the rich series of engravings contain an unusually large proportion of original pictures. The publisher's work is all that could be desired. On the whole, we have nothing but words of commendation, and the student and practitioner, and even the majority of specialists, will find it a very valuable book, and place it among the best upon the subject of which it treats.

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ORIGINAL ARTICLES.

DIFFERENTIAL DIAGNOSIS OF HEADACHES.*

BY JOSEPH MULLEN, M.D.
HOUSTON, TEXAS.
Fellow American Otological, Laryngological and Rhinological Society.

It is not my intention to describe all forms of headaches, their pathology, etiology and treatment, but rather to make use of the classification that I shall submit, with the view of more clearly arriving at a correct differential diagnosis; and also to point out that certain characteristics of head pains are dependent upon constitutional diseases, organic and functional; disturbances of the nervous system and special senses; absorption and retention of poisonous material within the economy, and to the essential points by which they are recognized, leading to the proper understanding of their causation and rational therapy. Headaches are due to many conditions, from a very remote cause to a very adjacent cause; from a purely functional disturbance to organic changes hyperplastic or necrotic; or to a toxic substance circulating in the blood channels the result of introduction from without, or of the development in the tissues or the retention of matter which should be gotten rid of by the emunctories. For the production of headache there must be either pressure or irritation of the sympathetic nerve filaments or branches of the fifth nerve, whose filaments encase the cranium like a nerve cap. Furthermore, headache is a symptom and not a disease, hence the necessity of isolating the cause.

* Read before the Houston District Medical Association, June, 1898.

The most common cause of all headaches is disturbance of the digestive system.† The next most common is eye strain, intrinsic or extrinsic; while the next most frequent is neurasthenia or nervous exhaustion with or without anemia.

The above applies merely to the functional headaches, in contradistinction to the organic, hence a classification that keeps in view the primary cause of the headache is in our opinion the one which will most satisfactorily assist in understanding, locating and treating them. The classification is: first, *Organic;* second, *Toxemic;* third, *Functional.*

Organic headaches are indications of far more serious lesions than any other forms in this classification, and may be due to constitutional diseases that have a local or remote role in their causation. The latter, however, can and do have manifestations of their presence in the special senses, especially in the eye. That is, in this organ there are apt to be very positive evidences of organic disease, whether located in the cranium or some other organ distant from it. As illustrations of the former, are brain abscesses, brain tumors, exostosis, meningitis and thermal fever; of the latter there are lesions of the kidneys. The seat of pain in an organic headache does not always indicate the locality of the trouble, but in tumors of the brain the rule is positive; i.e., the seat of pain points to the intra- or extra-cranial site of the growth. The pain may be local or diffuse, constant or intermittent. The most infrequent cause of organic headache is that of thermal fever. The history of the attack and seasons of the year will readily clear up the diagnosis, while venesection and cold bath with ice to the head will relieve the thermic state.

There is a chronic form of meningitis, which, while it is not common, according to some authorities, may be more prevalent than many suppose. The patient suffers for years. The head pains are constant, or as in tubercular meningitis, paroxysmal, the patient crying out suddenly. Very little can be done for these sufferers except perhaps such therapeutic measures as will relieve the pain.

Of all organic diseases characterized by severe headache none is more prone to have this symptom than is brain tumor. The pain is varying in intensity and frequently exacerbates with regularity. Headache is by far the most reliable diagnostic evidence of brain

† Hare, Practical Diagnosis, p. 458.

tumor, especially when coupled with inflammation of the optic nerve, which is present in eighty per cent. of all cases; this is confirmatory of the diagnosis, particularly so if there be symptoms of beginning compression, ptosis and hemianopsia.

In brain abscesses violent headache is also a prominent symptom; choked disc is however a rarity in abscess. The temperature is always above normal. The history of injury or point of infection, such as purulent otitis media, which, by the way, produces fifty per cent. of all brain abscesses, will tend to make the diagnosis clear. The importance of the constant character of the pain should never be lost sight of in all forms of headaches.

Exostosis should also be excluded by negative history of injury, slow growth, external appearances, etc. Syphilitic gummata, either intra- or extra-cranial, are also the cause of excruciating head pains. The history of infection, pains worse at night, enlarged epitrochlear glands, tibial nodes and ptosis, paralysis of the sixth nerve—all positively indicate the diagnosis. So constant are palsies of the third and sixth nerves that a French authority considers them if seen in a young adult, quite pathognomonic of syphilis.

The treatment of meningitis, brain abscess, brain tumor and syphilitic gummata is various and manifold, encroaching on the domain of cerebral surgery, and including so weighty propositions that space will not permit its full consideration. They should, however, be gotten rid of as soon as diagnosticated, and in the case of gummata which are the products of tertiary syphilis, large doses of potassium iodide to tolerance are indicated.

The organic forms of headache due to organic changes in organs now engage our attention. The most common of this variety are those due to renal diseases and the retention of urea and other excrementitious substances in the system, and vascular changes in the circulation. The pains are dull, not sharp, and ordinarily associated with a sense of fullness in the head. There are also nausea, vomiting, diarrhœa, and floating spots before the eyes. These symptoms are seen in chronic contracted kidney in which there are cardiac hypertrophy and high arterial tension. The urine should always be examined in all forms of chronic headaches; it will occasionally reveal something overlooked. Of course the treatment here can hardly be even suggested in a general way.

Toxemic headaches are due to the retention in the economy of a

substance normal or abnormal that becomes toxic by its accumulation in sufficient quantities without any organic changes, or to the introduction from without of some toxic agent. Of the first class perhaps the most important and common is lithemia and uricemia, due to the accumulation of uric acid. The next most frequent is the absorption of toxic substances from the rectum and colon, the result of fecal decomposition. All forms of fevers of bacteriological origin are associated more or less with headache: for example, the pathognomonic headache of the first week of typhoid fever. Diabetic headaches when they occur are of serious omen. Rheumatism is also commonly the cause of head pains. Instead of being localized they are usually distributed over the scalp, and are more or less tender and sore in character. The history of previous or present joint affections will aid in the diagnosis. Malaria, as you well know, is an exceedingly common cause of headache in this section of the country, especially that form in which the disease is illy defined. Quinine and arsenic afford beyond a doubt the most permanent relief. Again, the treatment of these various conditions would require a great deal of space. Lithemic headaches are greatly predisposed by errors in diet. The ingestion of meats and wine will, more than any other combination of food, precipitate an attack. Lithemia is not, as supposed, confined only to those of plethoric habit, but is frequently seen in thin subjects and those of sedentary habits. The urine is of high specific gravity and deposits a brick dust sediment. The acute attack is best treated by acids, preferably nitro-muriatic (aqua regia) and a non-nitrogenous diet, and after settlement of the stomach, salicylates, soda, lithia. Quite frequently ʒj–ʒij of Horsford's acid phosphates in water, sweetened to taste, before breakfast and retiring, will break up these headaches. To prevent their return, lithia citrate tablets, grs. v, morning and night, will afford immunity, providing a non-nitrogenous diet is adhered to.

For the relief of headache due to absorption of fecal ptomaines I know of nothing superior to entero-colysis twice daily. The pelvis is raised above the bed and the fluid allowed to pass into the rectum until a griping pain is felt over the bladder, when the tube of the fountain syringe is pinched. Wait for the abatement of the pain and permit the water to again flow in. Cold water is preferable; it washes out the lower bowels and stimulates secretion

and peristalsis. A teaspoonful of pulv. glycyrrhiza comp. at night is also serviceable.

The second variety of toxemic headaches is well illustrated by the familiar example of a debauch, the headache of the next morning after the night before. The frontal headache of the excessive use of tobacco affords an excellent picture of this class. Both conditions rarely require anything more than the withdrawal of the drug and the administration of a nitro-muriatic acid and nux vomica. Iron will produce an intense dull headache, frontal in situation; so also does the administration of ether. Nitroglycerin, the salicylates and quinine cause in large doses a violent, bursting headache. This symptom is caused by chloral and opium; it is also present in habitues of these drugs.

Functional headaches are by far the most common; hence their consideration suggests more time and careful study.

The various forms of digestive disturbance produce head pains of lesser or greater intensity. In fact, disturbance of the alimentary canal causes more headaches than any other one condition. These head pains are usually associated with distress in the bowels or stomach, and the evidences of gastric or intestinal fermentation such as belching and bloating of the abdomen; diarrhœa or constipation may be present. These headaches are nearly always frontal. There may be some cerebral congestion, so that lowering the head increases the pains. The characteristic of the pains is their inconstancy, and that they are frequently aborted when a purgative is administered. They are often associated with fullness and soreness of the eyeballs and muscæ volitantes. There may be a history of the ingestion of some offending substance. The indication in all these cases is to empty the stomach and bowels, getting rid of the cause, and instructing the patient so another attack may be prevented. Headaches due to an acute or chronic catarrhal condition of any portion of the alimentary canal should receive appropriate treatment. Lavage, entero-colysis, dilute hydrochloric acid and nux vomica to restore healthy secretions, nitrate of silver and the various stomachic and intestinal sedatives and antiseptics.

Neurasthenia, or nervous prostration, is the cause of persistent headaches. The pains are usually occipital and follow fatigue, and are relieved by rest. They may range from a feeling of soreness to the clavus hystericus, i. e., an intense localized vertical pain as

if a nail were being driven in the head. There is also a band of constriction around the head. These cases of neurasthenia may or may not have associated anemia. There may also be ocular disturbances, such as dilated pupil and hemianopsia. Generally the treatment of nervous prostration is very tedious and difficult, and the patient hard to control. The headaches can only be gotten rid of by treatment applied to the state of the nervous system, and we know of no treatment more efficacious than Dr. S. Weir Mitchell's rest cure. For the relief of a very mild head pain the galvanic current affords great comfort. It is much better to avoid giving drugs if possible. If, however, they must be given, acetanilid, antipyrine and preparations of this character are far superior to opium and its alkaloids, as these patients more than any others are prone to form the drug habit. In passing I shall only allude to the vertex headache of uterine disease.

Eye strain, in its many forms, is the cause of headaches varying in intensity, from a slight soreness to a very excruciating pain. For purposes of study and convenience it is much better to consider eye strain as internal and external. The former, that is, accommodative, depending upon asthenopia or spasm of the ciliary muscle, in contradistinction to external, due to weakness or over-action of the oblique or straight muscles, is decidedly more common than the latter, and is due to hypermetropia or far-sightedness, myopia or near-sightedness, and astigmatism. The pains may affect any portion of the head; they are, however, more frequently found as frontal, supraorbital, temporal and occipital, extending to the neck and spinal column. They always follow the excessive or prolonged use of the eyes, and are more frequently seen in school children, bookkeepers, clerks, in fact in any vocation in which the eyes are called upon to do a large amount of work. In these cases there is also drawing pain in or behind the eyeballs, with redness of the lids and conjunctiva. The headaches from eye strain are rarely present on early rising, but begin with the use of the eyes and are worse as the day advances. Resting the eyes and sleep relieves or stops them for the time being. Dr. W. F. Mittendorf,* in an examination of 1000 cases of ocular headache, found 83 per cent. due to astigmatism, 11 per cent. to hypermetropia, and 2 per cent. to myopia. While errors of refraction are commonly the cause of

* Medical Record, July 19, 1891.

eye strain, weakness or spasm of the muscle of accommodation is also an element of considerable importance in their causation.

Extrinsic eye strain, or that due to the disturbance of the muscular balance (outside of the eyeball), is, according to Noyes, more often due to weakness of the external straight muscles. The head pains may be felt in any part of the head, but they are usually confined to the occiput. Vision is blurred and there is pain in the muscles when the eyeball is suddenly moved.

As the headaches of internal eye strain are caused by mechanical conditions of the cornea, lens, etc., such as myopia, hypermetropia, etc., they can only be relieved by the correction of the same in the shape of properly fitted lenses. The headaches due to insufficiency of the recti muscles are relieved or cured by the correct adjustment of lenses, prisms, or, when necessary, by graduated tenotomies.

In reference to ocular or eye headaches it may be interesting to know that in frontal headaches 80 per cent. are due to the eyes and 40 per cent. of all headaches are partially or wholly of ocular origin. In connection with this form of headache, it does not necessarily follow that because the patient can see objects distinctly, the pains are not of ocular origin. Vision may or may not be good, but in either case near or close work, such as reading, sewing, shopping, etc., is the chief exciting cause. In treating any form of headache, and particularly this variety, the prognosis should be guarded, because about ten per cent. of all ocular headaches are incurable; hence when your patients have run the gauntlet and reach the oculist who fails to effect a cure of the headache, do not think hard of him for it.

The medicinal treatment is usually palliative at the best, and the list of drugs will compare favorably with that for the cure of epilepsy. There are, however, a few drugs which at times have a selective action; among the number are phenacetine, antipyrine, acetanilid, exalgine, sulphonal, and preparations of this kind. I rely more upon gelsemin and cannabis indica, especially in cases where the pain is confined to the eyeball. If the pain be supraorbital or infraorbital and has resisted other medication, I know of nothing more effective than the oleate of aconitine or the oleate of veratrine locally applied; care being observed, however, in their use. The skin must be intact, or else enough of the drug may be absorbed to produce poisonous symptoms.

Inflammation of the eyeball is almost always associated with headaches, especially the acute cases; for instance, iritis, in which the pain is intense, and worse at night. Corneal ulcers are also accompanied by head pains. Violent headaches are likewise present in acute or chronic glaucoma. The appropriate remedies applied to the causative condition will of course stop the headache.

Diseases of the nasal structures are generally associated with headaches, especially in ethmoidal, sphenoidal and antral diseases, also in atrophic and hypertrophic rhinitis, polypi, and in fact any nasal diseases in which the return flow of blood is interfered with. An acute cold is a common illustration of this statement. I can not go into the treatment of these various conditions as I have to a large extent elsewhere, as the necessary time is not at my disposal. Suffice it to say, however, that diseases of the nasal chambers are more frequently the cause of headaches than is generally supposed in this Southern country. There is very commonly a combination of nasal and eye disturbances producing the headaches, probably due to so much moisture in the atmosphere and the lower altitude. The headache dependent upon intra-nasal disease is easily differentiated from that due to eye strain. As a rule the patient awakens with a heavy, dull or painful feeling in the frontal, supraorbital, temporal or occipital regions, or it may be referred to the vertex or to any of the branches of the superior or inferior dental nerves. The point, however, is, that it is a morning headache, especially when the atmosphere is particularly heavy. There are cases also in which the pain awakens the patient at any hour in the early morning. When the sun comes up and the day gets warmer the headache either disappears or gets very much better, to probably become worse again as night comes on and the moisture accumulates. These headaches may follow an acute rhinitis, that is, in the last stage of a "bad cold." The patient may not have been troubled with any pain during the entire attack, but at its termination the headache begins.

Inflammatory states of the ear are also productive of headaches, especially those confined to the external auditory canal, meatus and auricle. The accumulation of ear wax and foreign bodies in the canal will also cause headaches. The pain is confined usually to the mastoid, temporal and occipital regions. A small furuncle or a small abrasion of the external auditory canal which has become

infected will at times produce distressing head pains. The treatment of these various conditions will suggest itself at the proper time and opportunity.

Roughly speaking there are about four pharyngeal conditions capable of producing headaches of such intensity as to draw the patient's and doctor's attention from the cause to the effect. They are adenoids, post-nasal catarrh, follicular pharyngitis and enlarged tonsils. With the first and last you are very familiar—that is, adenoids and hypertrophied tonsils; the mouth-breathing, listless and dull facial expression so characteristic of their presence, so uniform are these, that they have become pathognomonic. The treatment calls for their removal. The headaches are usually dull, rarely sharp or excruciating, and are felt in any portion of the head. Like post-nasal catarrh and post-nasal enlargement of the turbinates, they may produce vertex head pain.

In my experience vertex headache is more frequently due to post-nasal disease than to any other cause, and particularly in that form known as post-nasal catarrh. I have often seen an application of ten grain silver solution relieve a vertex headache which had resisted other therapeutic means.

In presenting this paper I have done so with the sole object of differentiating between the various forms of headaches, so that their cause could be more readily isolated and incidentally a better understanding of their etiology and pathology obtained. I have not stated a great deal in reference to treatment, because I believe that if the cause be gotten at by an observing and clever physician, the appropriate treatment must follow as a sequence, especially if the fact be recalled that the causes of headaches are as numerous as there are organs in the body, and that surgery and therapeutics offer means as numerous as are the causes.

Moore-Burnett Building.

A New Hemostat.—Successful demonstrations have been given in London by Lawson Tait with an electric hemostat. A platinum wire, arranged to carry a current, is enclosed in the blades of a pair of steel forceps, the wire being insulated by a bed of burnt pipe clay. A current of suitable voltage is turned on, the artery seized and compressed, and in a few seconds the tissues and arterial walls are so agglutinated that the passage of blood is rendered impossible. The temperature is about 180° F., showing a great difference between this and the electrical cauterizing instruments, and the necessity for a ligature is removed.—*Phila. Med. Jour.*

BRACHIALGIA.*

BY G. G. BUFORD, M.D.

MEMPHIS.

Assistant to Chair of Physiology and Lecturer on Nervous System, Memphis Hospital Medical College; Neurologist to Shelby County Insane Asylum.

In presenting this subject to the society tonight and asking their free and full discussion, I feel like I am carrying owls to Athens. My excuse for presenting the paper is to report several cases that have recently come under my care.

Brachialgia is considered as a very rare trouble, but it seems that the apparent reason for this opinion is, not the rarity of the lesion, but the frequency of misdiagnoses—all painful affections of neck, chest and arms being diagnosed as rheumatism.

CASE I. I was called December 8, 1897, to see Mr. J. M. H., a gentleman of good habits and family history, but rather poorly nourished, anemic, a poor sleeper, and of neurasthenic type. He had been confined to bed four days when I first saw him. Temperature 103° and bowels constipated. From December 4th to 30th the temperature, under cold packs, ranged, from 99° to 103°, and the bowels acted only in response to purgatives. Diagnosis—typhoid (or more properly, "leucomainic") fever. At the beginning of the third week he began to complain of pain in right side of chest from the lower margin of ribs up, and involving right arm. The pain was subacute in character, with occasional exacerbations, which soon subsided without any special treatment, and gave him but little trouble, only when he attempted to rise from bed, or move right arm. December 30th, temperature normal. He was permitted to sit up, and was apparently improving. On January 2nd I was hastily summoned, and found him suffering with intense pain in the right chest and right arm, tachycardia, dyspnœa, and painful hyperesthetic areas. He stated that the above condition came on suddenly while he was bending over in front of the fire. Opiates were administered, and he slept well. The pain was felt again next morning, and continued for six or eight days, except when opiates were used. Temperature was normal during this entire period. Diagnosis—brachialgia. The right pupil was dilated, and there was paresthesia of the right little and ring fingers, which passed off about six or eight days after the first seizure.

This gentleman stated that he had suffered a similar attack previously, which came on suddenly while he was bending over, doing some work in his garden.

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* Read before Memphis Medical Society, February, 1898.

CASE II. I was called to see B. J., a demimonde and opium habitue, and found her suffering intensely with pain over the right upper chest, neck and arm, and numbness in the right little finger and one-half of the ring finger. The entire painful area was slightly hyperemic and so hyperesthetic that palpation and percussion were imperfectly performed; auscultation detected no lung lesion. Opiates were administered hypodermically. She was much better next morning. Diagnosis—brachialgia following traumatism.

She stated that twelve months previous, in an altercation, a man had tried to throw her out of a second-story window of a hotel. She received a kick or injury in some way, from which she suffered similarly to the above described condition, and for which she was treated eight months.

A few days after I saw her last she attended a ball and died a few days subsequently of pneumonia. There was little or no fever, pupillary or cardiac disturbance in this case.

CASE III. I was called on February 9th to see P. B., an old negro woman of about 70, who performed for me that important function of nurse in ante-bellum days. Her breathing was deep and full; pulse bounding and sthenic; left chest, arm and shoulder so painful that she could not bear to have the arm moved, and her suffering was little influenced by any amount of opiate that I was willing to administer to one of her age. She died four days after first visit.

Here we have three cases of brachialgia or acute inflammation of the nerves, which arise from the cervical enlargement of spinal cord, and are distributed to the parts of neck, chest, shoulders, arms and hands. Case I seems to have been caused by pressure on the nerves as they passed out at the invertebral notches, and probably the nerve trunks were swollen. There was no history of traumatism or syphilis. Case II obviously resulted from traumatism exterior to the spine. Case III is accounted for only on the hypothesis of exposure and exhaustion, the patient having nursed her husband, who was buried the day she was taken ill. Syphilis can be well eliminated as a causal factor from Cases I and III, while there were no evidences of it in Case II.

The causes of brachialgia are the same as that of pain in any other part, consequently treatment is the same.

Brachialgia is often misdiagnosed as angina pectoris, rheumatism of the chest, diaphragmatic rheumatism, and sometimes as acute myelitis of the posterior part of cord, which is not far wrong, as we often have this both as a concomitant and a sequence.

In diagnosing any painful affection we should always remember that nothing but a nerve fiber is capable of transmitting a painful impression, and that nothing but nerve cells are capable of receiving and storing impressions, and that impressions are usually referred by the mind to the parts to which the nerves which convey the impression of pain are distributed. It should also be kept in mind that a lesion of any segment of the spinal cord is manifested in the parts to which the nerve fibers of the segment are distributed. Then, whether the irritation is central or peripheral, the sensation is always referred to the periphery.

The law of Hilton tersely expresses the correct idea: "The same trunks of nerves whose branches supply the groups of muscles moving a joint, furnish also a distribution of nerves to skin over the insertion of muscles, and with interior of the joint moved by those muscles receives a nerve supply from the same source." Also, "Every pain has its distinct and pregnant significance, if we will but carefully search for it." In that part of the spinal cord which lies between the fourth cervical and second dorsal vertebræ, we have the origin of the nerves which go to form the brachial plexus. This is the cervical enlargement of the spinal cord. Opposite to this and on each side of the column we have the cœlio-spinal centers of the sympathetic system, which receive their force from the cerebro-spinal, and reflect any irritation of this system here. The phrenic nerve arises by three heads from the third, fourth and fifth cervical nerves, and is distributed to the pericardium and under side of the diaphragm. The cardio-accelerator center of the sympathetic also lies near, and like the cœlio-spinal center refers any irritation of the cervical enlargement at its points of distribution. The ulnar nerves, whose peripheral distribution is so well defined in the little and half of the ring fingers, also have their origin in the cervical enlargement, as well as those other nerves of the shoulder, arm and hand. We find then nerves having their origin in the cervical enlargement and distributed to the neck, chest, shoulder, arm, hand, diaphragm and pericardium, and connected with the centers which preside over and control pupillary dilatation and cardiac acceleration. We have then, as pathognomonic of a lesion here, disturbance of the functions of diaphragm, tachycardia, dilated pupil, and pain and disturbance of motion of the muscles of chest, neck, shoulder, arm and hand. When the lesion is exte-

rior to the intervertebral notch, there is no pupillary pericardial or diaphragmatic disturbance, but pain and loss of motion confined to the shoulder, arm and hand, manifested in proportion to the amount of the lesion.

Randolph Building.

ACTINOMYCOSIS.

BY J. E. WALKER, M.D.
HORNELLSVILLE, N. Y.
Superintendent of the Steuben Sanitarium.

The peculiar manifestations known to be the result of the disease now called actinomycosis have been recognized in nearly all countries, and have been noticed about the head and neck of domestic animals, more especially cattle. There have been many names given to these lesions, showing that their etiology has been unknown until recently. During the latter half of the present century the condition has been studied more particularly by veterinarians. As early as 1833, a swelling which appeared in cattle, and known as "clyers," had been studied by Prof. Dick. He dissected several animals which presented growths in the parts about the throat and neck, and described them as "medullary carcinomatous tumors." He observed that abscesses sometimes developed, and that in other cases sores occurred which remained indolent, while in others the growths increased until they interrupted respiration by their large size, also preventing deglutition. In 1841 he made further reports on the same subject, and described the mouth and throat of a cow in which there was a large tumor, and spoke of it as a mass of fungous flesh. This time he stated that the disease was not unknown in cattle, and that it was also known as attacking the jaws in human beings; also that it had been called by surgeons "osteo-sarcoma," and was due to disease of the molar teeth or some accidental injury.

Mr. Relph, two years later, contributed to the *Veterinarian* an article entitled "A Kind of Indurated Tumor," which he met with in his practice oftener than anything else, except the common wen. He spoke of a section of one of the tumors displaying several abscesses, with matter varying in consistency, inclosed in what seemed to be fibro-cartilaginous cysts. In 1845, Langenbeck described the

condition, but did not classify it. The same year Prof. Simonds wrote of it, calling it "schirrhus tongue." Under this term it was described until quite recently. On the Continent the disease had been everywhere misunderstood. Although there were several other reports of cases, each one had a different name for it, veterinarians calling it "osteo-sarcoma" and "medullary carcinoma." Many old pathological specimens, which are to be found in museums throughout Europe, which have been considered sarcomatous, were undoubtedly actinomycotic. It is probable that some of the great tumors about the lower jaw, which constituted in ancient time a much dreaded malady, were also actinomycotic, though they were diagnosticated as *angina ludovici.*

Bollinger was probably the first one who gave a good demonstration of microscopical and gross specimens. His paper was presented at Munich in 1876. He spoke of the character of the tumors, that they consisted of several centers of growth, bound together by connective tissue, saying that the outer surfaces presented yellowish-white suppurative foci, and sometimes a spongy texture, owing to minute cavities being formed in a fibrous crust, which contained a caseous pulp. He also described small granular bodies, which were sometimes encrusted in chalky matter. He had discovered that these latter bodies were true fungi, and maintained that the constancy of their appearance was not accidental, but had a pathological significance. The article presented was exhaustive, taking up the peculiar process of tissue change, particularly the enlargement and hardness of the tongue, which obtained in some cases. It went by the popular name of "holz-zunge," which means wooden tongue. Continuing further research, he discovered the same fungus in growths which occurred in the larynx, pharynx and stomach. He submitted the fungus to Harz, a botanist, who described and assigned it a position, and to him is due the name by which the condition is now known. Bollinger's paper attracted widespread attention. Several other claims were brought forth to the effect that they had already discovered the organism as early as 1865. Hahn of Munich claims to have discovered the fungus in 1870. Bollinger was certainly the first to pursue anything like a systematic investigation of the actinomycotic condition, or to present any definite knowledge regarding its etiology. His researches were corroborated by Johne, Ponfick and others;

finally, the pathological identity of the various lesions, which had gone by so many different names, was established.

James Israel, in 1877, described quite fully the condition as occurring in man, with a report of a case of myotic disease of the lungs which simulated tuberculosis, but, upon careful examination, was found to be pulmonary actinomycosis. The disease was not generally understood, however, until the classical work of Ponfick, which appeared in 1882.

In 1888, Prof. Crookshank of King's College, London, in whose laboratory I had the pleasure of studying the actinomyces, presented to the agricultural department a most elaborate document, which was illustrated and prepared with great care. To him is due the credit of establishing the fact that many of the lesions in animals that had usually been considered tubercular were only manifestations of actinomycotic disease. His paper is probably the most elaborate monograph upon the subject that has ever been published. The substance of it is now in his recent work on the infective granulomata. He places the disease under this head. He says, an irritation and inflammation is produced by the presence of a special irritant, a microphyte, developing a collection of round, epitheloid and giant cells, inclosed within a fibrous reticulum, constituting nodular tumors of various sizes. He further says, while it appears that the actinomycotic fungus may, by itself, produce pus, it is nevertheless true, that suppuration in actinomycotic tumors is commonly due to a secondary infection by the ordinary pyogenic organisms. He speaks of it as being popularly known as "lumpy jaw;" that it is especially prevalent in river valleys and marshes, and on land reclaimed from the sea, and in animals it seems to occur more frequently in winter, and more often in the young than in the old. Also, that there is strong reason for believing that the fungus gains access to the system through ulceration of the mucous membrane, or through carious tissue.

Up to the time of Crookshank's report he had collected one hundred and thirty human cases in England and on the Continent, and lucidly described the different manifestations of the disease. During the past year he has written a second paper, published in the *London Lancet*, in which he opens his article with this question: "Is human actinomycosis a rare disease in this country, or are there many cases lost sight of under a variety of names?" He goes on

to speak of its various manifestations as they appear in man when different parts of the human system are involved.

The presence of the special fungus in the granular tissue of the growth which is usually mixed with the pus, is the diagnostic feature of actinomycosis. It is a condition which has many times been confounded with sarcoma, and occasionally with tuberculosis. Sarcoma does not suppurate and break down as early as the actinomycotic granuloma. Tuberculosis is attended with glandular infection, which is not the case in actinomycosis. In any case, resort to the microscope should be made as early as possible, when the detection of the characteristic microphyte will positively establish the diagnosis.

The fungus can sometimes be detected with the naked eye in the discharges of an ulcer and from the curetting of a cut surface. Its tufts vary in dimensions, more often being about the size of a millet or mustard seed. These little granular bodies, if placed against a dark background, appear yellowish-white, but with transmitted light, look somewhat brownish. It is claimed by some that they differ in color according to their age, the older the tuft the darker the shade. The simplest method of examination is by pressing down the sulphur-yellow nodules between the slide and cover glass, when they flatten out, and sometimes a slight grating sensation is perceptible, which is probably due to calcareous matter. At first appearance with a low power, a specimen might be taken for granular tissue, but when a higher power is used, one observes something like a rosette of clubs or a sunflower appearance, which is characteristic of the ray fungus. Usually pus cells and other debris are found in connection with the specimen. The presence of lime salts may be readily demonstrated by the application of acids, which dissolve them, but do not affect the clubs, neither are they affected by ether, which proves they are not fat crystals. There is said to be a difference between specimens removed from man and the organism which is taken from animals, probably owing to a mixed infection in man. In animals there does not seem to be the strong tendency to suppuration that is evinced in the human being.

There has been some discussion between Harz and Bostrom as to whether the clubs should be regarded as conidia. Paultauf describes the actinomycotic fungus as a bacterium, regarding the

club-shaped figures as degenerate forms. Israel and Wolff place it among the fission fungi. The various species of the germ that have been described are given by Gasparini as eighteen in number.

More perfect results have been obtained since the introduction of Gram's method of staining, which was the method we used in Crookshank's laboratory. After using the Gram's stain we counter-stained with eosin, so that the clubs and threads would stand out separately.

Crookshank describes the life history of the ray fungus in this way. The spores sprout into hyphæ, and these form fine threads which branch irregularly and sometimes dichotomously. The extremities of the branches develop the club-shaped bodies. These are so closely packed together that a more or less globular body is formed with a central core composed of a dense mycelium. By Gram's method, these threads can be differentiated into an external sheath, with protoplasmic contents. He goes on to say that in whatever way formed there is but little doubt that spores are set free in the vicinity of a rosette, and give rise to fresh individuals, and that spores and young fungi are taken up by wandering cells, by which they are conveyed to a distance, where they reproduce their kind.

There are many theories regarding the introduction of the fungus into the tissue. Some have claimed that it may be carried by the way of a carious tooth, or that it may attack the alveolar process; others that it is due to an infection of an eroded mucous membrane, and that it is more common with people who are more or less associated with cattle, and come in contact with hay, grain, etc., and have even advised against human beings ever taking hay or straw in their mouth under any circumstance. The probable carriers of the germ are hay, straw and the cereals, according to the majority of observers, as foreign bodies of this kind have been frequently found in animals suffering from the disease. Those who have collected statistics regarding actinomycosis have not been successful in proving that there are special dangers of infection from animals; that quite a percentage of the cases develop in those who are not associated with them is true, so at the present time there seems to be an uncertainty as regards the *exact* method of transmission.

The microphyte once introduced sets up a low grade of inflam-

mation, resulting in the development of a mass of granular tissue, in the midst of which the fungus is to be found. By a continued formation and accumulation of such masses, tumors of considerable size develop. The disease may remain stationary for some time, and then may progress quite rapidly. Degenerative processes, however, usually begin early. The breaking down of nodules in any part of the tumor forms small pus cavities, which sometimes come to the surface, establishing fistulous tracts. These cavities, after discharging, sometimes heal spontaneously, while a process of suppuration is going on in some other part of the growth. The clinical course of actinomycosis in certain respects has the appearance of a malignant tumor. In fact, the histological characteristics are almost identical with round-cell sarcoma, and many times can only be differentiated by the discovery of the ray fungus.

Although the ray fungi seem to have great vitality, yet it has been difficult to cultivate them outside the body, the usual culture media not seeming to offer a favorable soil for their development.

The first successful experiments were made by Bostrom in 1886, with plates of coagulated blood serum and agar-agar. O. Israel also succeeded in cultivating the fungus on blood serum. Some have been successful with coagulated egg albumen. Cultivations upon glycerine agar show a mass of miliary nodules. The growth on potato is similar, excepting that the culture looks dry. In broth it is said that nodules sometimes develop to the size of a hazelnut in a short time. Gelatine is slowly liquified.

In 1883 James Israel was successful in inoculating a rabbit by introducing a piece of actinomycotic tissue into the peritoneal cavity. Ponfick also produced the disease artificially in calves. Others have since succeeded in inoculating animals with pure cultures. Different manifestations are observed according to the locality operated upon.

It seems that every part of the human system may be invaded by the germ, and that no tissue is resistant to the microphyte. It most frequently attacks the jaws and regions about the throat and neck; probably in more than half the cases recorded the lesion has been observed in this locality, undoubtedly owing to the mouth being the most natural point of invasion. Several cases have been reported of actinomycotic tongue, as well as a few cases where the skin has been attacked. Every part of the digestive tract has been

invaded. When affecting the bowels, the patient seems to die of general marasmus, as in the case reported by Chiari. Dr. Ransom of London has recently reported eight cases where the liver seems to have been primarily the seat of the lesion. Quite a large number of cases of actinomycosis of the lungs have been observed throughout the world during the past five years. The condition simulates fetid bronchitis, broncho-pneumonia, gangrene, bronchiectasis, or more often tuberculosis, the diagnostic point being the discovery of the characteristic growth in the sputum. The average duration of pulmonary actinomycosis is said to be about ten months. Necrosis of the ribs produces abscesses and occasionally metastases in all parts of the body. Death results from septic symptoms as in pyemia, which it generally becomes. In whatever part the invasion may occur, there seems to be a general tendency toward fatty degeneration. It is characteristic of this disorder that its progress does not excite sufficient irritation to establish resistance. Nowhere does the bone oppose its extension by a wall of inflammatory tissue; on the contrary, it shows progressive caries, but never sclerosis nor osteophytes. A case of cerebral actinomycosis has been reported by Bollinger. Bourquin has observed a case of meningitis, and Quervain one of encephalitis, due to the invasion of the parasite. The symptoms were those of other cerebral abscesses or brain lesions. A disseminated condition has also been spoken of by Israel, where the whole system seems to have been involved.

It is claimed by some that without radical treatment the condition tends toward indefinite extension or ultimate death by exhaustion. Until recently surgical measures have been solely relied upon. During the past three years it has been found that the iodine preparations have appeared to be almost specific in arresting and curing the disease. Veterinarians are now giving 75 grains of potassic iodide daily, meeting with most excellent results. In many cases the diseased tissues are treated locally with iodine. Dr. Salmon of the United States Bureau of Animal Industry has stated that 63 per cent. of cattle treated with the iodide recover. Cases are reported with failure to cure by surgical means which have been successfully treated with iodide of potassium. In doses of one gram it improves the general condition, as well as modifying the local manifestations for good. Just how it works, we are

unable to say. The theory is advanced that it increases tissue resistance. It has been claimed by some that owing to the good results obtained by the use of iodide that some cases that have been considered syphilitic have been actinomycotic instead. We have reason to hope that with the early recognition of the pathological condition, many cases may be cured by the thorough administration of the iodides. Nitrate of silver seems to be antagonistic to the germ, and some observers have claimed beneficial results from its use, both locally and internally. In localized lesions, complete removal surgically should be accomplished if possible. When all the diseased tissues cannot be extirpated, it is advisable to remove whatever can be done safely, by curetting, in conjunction with other measures.

Some years since a case was brought to my notice which presented a peculiar condition of the left side of the face. Upon careful inspection, there seemed to be multiple abscesses, with hypertrophied tissue, which was so prominent as to appear pendulous. Several sinuses led into the deeper tissues of the cheek, but did not extend entirely through to the mucous membrane. These secreted a thin, somewhat ichorous pus, with small bodies, which I then considered granular debris. Not being familiar with the actinomyces at that time, I pronounced it a case of mycosis. The treatment consisted in opening and thoroughly curetting the abscess cavities, and applying, until healing took place, a solution of boric and salicylic acid, fifteen grains each to the dram of glycerine. The recovery was perfect, excepting slight cicatrices, which show but little. The patient was a dairy maid, and also worked in a cheese factory owned by her father. The lesion had lasted about two years, and was undoubtedly actinomycotic.

My attention has recently been called to the condition through the kindness of Drs. Brown and Chittenden of Addison, N. Y. I had the pleasure of examining, in consultation with them, a case of about six years standing.

The patient, a man 68 years of age, a drover by vocation, had, throughout his life, been associated with cattle. I was called more particularly on account of the laryngeal stenosis from which he was suffering. The whole neck was involved, filling the space between the jaws and clavicles, the larger part of the development being on the right side. Several fistulæ were discovered leading out from small suppurating cavities from the interior of the enormous growth. Scars were found where there had been those which had healed spontaneously. On making an incision in what seemed to be a point of fluctuation, there was a discharge of a yellowish fluid, which had no odor, the patient claiming to have relief whenever one of these cavities opened. Upon the right side of the pharynx there seemed to be a granular surface, from which exuded, and was expectorated from the mouth, a large amount of material which had somewhat the appearance of that coming from the exterior sinuses. The maxillary bones did not seem to be involved. The patient had been unable to lie down, fearing that he might die from asphyxia. Spasms about the throat had been occurring frequently, but were con-

trolled to quite an extent by a solution of boracic acid and cocaine applied to the pharynx by means of an atomizer. His stomach was irritable, and general condition not good. The stenosis rendered the breathing shallow. In the posterior part of the middle lobe of the right lung were numerous rales, with prolonged expiration, and I suspected that the condition might have extended downward. Upon careful examination of the case I was obliged to eliminate malignancy, because of its long standing, also from the peculiar appearance of the growth, which differed from either sarcoma or carcinoma. Goiter, which it had formerly been called by some, was excluded on account of all the tissues of the neck being involved, as well as the suppurating foci which obtained.

I saw him with Dr. Brown subsequently, but found no improvement, with the exception of his being able to control the spasms and render him more comfortable by the administration of a mild anodyne. His stomach would not tolerate large doses of iodide, and he could take but little nourishment; he consequently grew weaker day by day, death closing the scene about six weeks after my first visit. The day following the first consultation some tissue was sent me by Dr. Brown from one of the sinuses, in which I found, upon microscopical examination, the characteristic fungus, mixed with pus cells and debris, which verified the diagnosis of actinomycosis.

I believe that could the disease have been diagnosticated earlier, before stenosis and physical exhaustion occurred, that the man could have been saved, hence the importance of an early diagnosis in cases of this character.

There has probably been as large a percentage of cases with us as in Europe, but not being as careful in our observations of this condition, they have been passed by as being due to some other pathological state.

REPORT OF SOME SURGICAL CASES.

BY J. H. VENN, PH.G., M.D.

MEMPHIS.

Ex-Resident Physician Mercy and Roselie Hospitals, Pittsburg, Pa.; Surgeon Shelby County Poor and Insane Asylum.

CASE I. During the winter of '96 I was asked by Dr. R. S. Stanley to see a negro lad, about 10 years of age, who, while playing near some horses, had been kicked. When seen he was unconscious. The injury found was a compound depressed fracture of the frontal bone, situated a little to the right of the median line. We decided upon an immediate operation, which was done. We trephined a little to one side of depression, which enabled us to remove plates of depressed bone readily. The dura had been pierced by a spicule of bone. The spicule was removed and opening into dura enlarged, some lacerated brain tissue removed, site of wound thoroughly cleansed, and dura closed. The boy made an uneventful recovery.

CASE II. M., male, white, aged 30 years, was operated on by Dr. Haynes and myself. This man had suffered with what had been considered traumatic epilepsy for

a period of ten years. He presented marked agyria, due to silver salts taken over a long period. For about five years back he had been having several attacks daily, and complained constantly of pain in eyes. The site of injury was over the posterior angle of the right cerebrum. This, with the eye conditions, were the only focalizing symptoms, but were considered sufficient to warrant trephining, which was accordingly done. At the operation, what was considered a cyst was found, and 1 oz. of fluid evacuated. The patient recovered from the operative procedure, but due to bulging of scalp over opening in bone, and the recurrence of pain in the eyes, it was deemed advisable to aspirate cyst. This was done several times. About three weeks after operation the patient suddenly died. At autopsy, a tubercular meningitis was found, a condition, the possibility of which, had never been considered.

CASE III. On the 11th of September, '97, I was called to see a white boy, about 9 years of age, who, while playing around some large grave stones, had his head crushed by one falling on him. The injury proved to be a compound comminuted depressed fracture of skull at junction of left squamous portion of temporal bone, with parietal bone. Hemorrhage from left ear was marked. The only symptom of depression presenting, when seen, was a tendency to irritability, and a slight but noticeable enlargement of left pupil. Dr. Haynes helped me in the operation. The depressed fragments were removed and the remainder elevated. The fracture into the base could be easily traced. The after-treatment consisted of weak bichloride of mercury (1–10,000) and peroxide of hydrogen irrigation of external ear, with a loose pack for protection. There have never been any symptoms due to displaced fragments of the base. The recovery seems perfect; however, quiet, avoidance of study, etc., have been advised for at least a year.

CASE IV. A negro man, about 38 years of age, who, while drunk and fighting, had been hit on the head with a spade. Dr. R. S. Stanley, whose case it was, and I, saw the man one week after the accident happened. We found the man semi-conscious, with temperature of 105°. The removal of a piece of stickingplaster, which was found on forehead, disclosed a straight wound, about two inches long, a little to the left of median line of forehead. The bone could easily be seen, and showed a depressed fracture. Trephining was immediately resorted to, with the result that a great quantity of pus, 6 or 8 ounces, was liberated. The frontal lobe of cerebrum had been almost entirely destroyed. The man died in twelve hours.

CASE V. This case was seen with Dr. F. A. Jones. It occurred in an aged negro man. His family history was tubercular. His previous history as to health, habits, etc., was very unsatisfactory. His present condition dated back about six weeks when, after exposure, he was taken with a chill, which was followed by an irregular, febrile movement, marked dyspnœa, and pain over heart. When we first saw him he was markedly week and emaciated. Dyspnœa was great. He had little, if any, pain, but was having an irregular form of fever, with occasional chilly sensations, and was constantly bathed in sweat. Examination of lungs showed some rales. Inspection of heart area showed feeble apex beat just above and a little to left of nipple. Auscultation gave a weak heartbeat in region noted, and a peculiar churning sound, which was transmitted over and in direction of ensiform. Palpation imparted an indistinct thrill. Percussion gave an increased area of dullness, more or less square in shape. Considering the history and physical signs, we decided that a purulent pericarditis existed, and immediately operated. I first aspirated at a point about an inch and a half inside of nipple at upper border of sixth rib. Pus being found, an incision was made and a

drainage tube inserted, and stitched to chest wall. About 6 ounces of pus was liberated. No irrigation was attempted. The patient lived forty-eight hours. Drs. Jones, Haynes and Brown assisted.

CASE VI. E. H., aged 8. Previous health perfect. While standing on the hub of a wagon wheel, the horse that was attached to wagon started. He slipped, and his right leg was caught between spokes and bed of wagon. Drs. Francis and Goltman saw patient with me. The femur was separated at the lower epiphyseal junction, and was found protruding to the extent of $4\frac{1}{2}$ inches through a lacerated wound in the popliteal space. The periosteum had been stripped up, leaving bone denuded. Under anesthesia, after thorough cleansing, reduction was attempted, but failed, although the wound was enlarged. About an inch of femur was then resected and the ends approximated (without pegs or wiring), the wound packed with iodoform gauze, and a plaster cast, with a large posterior window, adjusted. This boy had no untoward symptoms, and is now, three and a half months later, entirely well, with an unnoticeable shortening of about one-half inch, and very little limitation of joint movement.

Johnson Building.

PRECOCIOUS MENSTRUATION AND PRECOCIOUS PREGNANCY.

BY C. C. MAPES.
LOUISVILLE.

Medical men are not infrequently interrogated as to the earliest period in the life of a human female menstruation can occur, also the earliest age at which it is possible for pregnancy to take place. Both questions are of considerable importance from several points of view, viz.: physiological, medical, medico-legal, sociological, etc.

According to most authorities, the age limits between which pregnancy is possible are fixed by the appearance and cessation of the catamenia, ordinarily beginning about the fourteenth and ceasing at about the forty-fifth year, that exceptionally the menses appear as early as ten years, and may not cease until the end of the fifth decade of life. It is also stated that in hot climates menstruation is established much earlier than in temperate and frigid zones, being rare in the latter before the seventeenth or eighteenth year, while in the former it is not uncommon as early as ten years. This, however, is not confirmed by Joubert,* who insists, with Playfair, that the influence of climate on the catamenia has been unduly exaggerated. In 3194 cases under observation at Calcutta during the last four years, including European and rich native

* British Medical Journal, quoted by the Medical Age, Detroit, Mich.

women seen in private practice, and poorer natives under treatment for various diseases in the Eden Hospital, Joubert found very little difference in the percentages for various ages between the Europeans who had passed their youth in Europe and the women of pure blood born in India; 23.4 per cent. of the former, and 25.8 per cent. of the latter began to menstruate when thirteen years old. Hence climate seems to have no influence on the catamenia of women of the European race. Indeed, the European-born girls showed a larger percentage of menstruation beginning at twelve than the Indian-born Europeans (13.4 per cent. against 10.8). Among the Europeans a difference was at once noticeable, the type approaching that of the natives between twelve and fourteen, but diverging again in the direction of the European type between fourteen and sixteen. Such women are much influenced by native habits. In the non-European natives, Hindus, and Mohammedans, but chiefly the former, the greatest percentage of dates of first menstruation occurred at twelve (36 per cent). Early menstruation is determined in native women, says Joubert, by precocious knowledge and too early exposure to sexual excitement.

Cases are now and then recorded in medical literature where menstruation has occurred at a very early age, e. g., Tidy mentions the case of a girl who menstruated when four years old, and became pregnant at eight years.

Doctor Irion † has reported a case, seemingly well authenticated, where a baby menstruated from birth, the flow returning with perfect regularity, the child being in good health. In one instance where the period was missed, the child suffered apparently in the same way as an adult female. The skin was fair and clear, the eyes bright and intelligent, the breast and mons veneris were considerably developed, and during the menstrual flow the breasts enlarged and became somewhat sensitive to the touch. The mother's menstrual periods were established at the age of thirteen years.

Doctor Howie ‡ records the case of a girl who commenced to menstruate when three years and fourteen days old. During menstruation the child complained of pain in the back, and was languid. The pubic hair was quite well grown, though short. The vulva was well-formed and large, and the breast prominent.

† Vide Year Book of Medicine and Surgery (Gould) 1898.

‡ loc. cit.

Doctor Morse § reports a case of precocious maturity in a girl infant, menstruation beginning at the age of nine months, and states that precocious maturity is a physiologic congenital anomaly of development. Menstruation is never the first symptom, but is always preceded and accompanied by others. Menstruation most often appears in the first two years; it is accompanied by ovulation. The attributes of maturity are not all acquired before the age of seven or eight years. Sexual desire is soon developed. Pregnancy may occur early. Menstruation may continue as long as when it begins at the normal time.

Grover || reports the following case: A female child born January 28, 1898, having two unusually developed mammary glands (the nipples especially so) which secreted milk so abundantly that the mother was obliged to pump the milk out of both glands once daily. The child was fretful until this was accomplished. Secretion of milk began when the child was one week old. The mother pumped the milk out in the author's presence one morning, and the amount obtained was about two fluid drams. Macroscopically it had the identical appearance of mother's milk; it was not examined microscopically. The author states that the child is robust and has the general appearance that healthy babies have at her age.

Doctor Price * reports the case of a young girl who menstruated at four years of age. Hair on the pubes and under the arms was noticed at the age of eighteen months. Her body was shapely and gracefully curved, hips broad and breasts well developed. Sexual organs normal in formation, with the exception of a slightly hypertrophied clitoris.

Waldmiroff † records a case of precocious adolescence in a rachitic girl of six and a half years.

In *Revista de la Sociedad Medica Argentina* ‡ is published a portrait and an account from the pen of Dr. Lopez, of a child five years of age, who has menstruated since she was eighteen months old, the flux on each occasion persisting from three to five days, and very abundantly as to quantity. Two days before each period

§ loc. cit.
|| Medical Record.
* Vide Year Book of Medicine and Surgery (Gould) 1898.
† loc cit.
‡ Quoted by Medical Age, Detroit, Mich.

she complains of extreme pain in the pelvic organs and general *malaise*, such as characterizes the same physiological operation in adults. The mons veneris and external organs of generation are abundantly developed. The age of the mother is twenty years; she was married at fourteen. The development of the child is very complete; she is, in fact, a miniature woman. She is very sensible of sexual passion; to such a degree, indeed, as to induce depravity and consequent illness. The child has been under the observation of Dr. Lopez for two years. The portrait conveys the impression of a child exceedingly bright for her years, the mammæ alone giving evidence of abnormality.

Doctor Rein § exhibited before the Kieff Obstetrical and Gynecological Society a girl aged six years, who had commenced to menstruate regularly about a year previously. The catamenia recurred every three or four weeks, and lasted, on each occasion, from four to ten days. The breasts, external genitals and pubic hair-growth resembled those of a girl thirteen or fourteen years old. The abdomen proved to be considerably enlarged, the circumference amounting to 85 centimeters. Examination revealed the presence of a fluctuating, thick-walled ovarian cyst.

A case is mentioned in the *Lancet* (London), April, 1881 || where a girl aged eight years and ten months gave birth to a child which weighed seven pounds.

Gleaves, of Virginia, in the *Medical Record*,* reports in detail the case of a girl aged ten years and two months who was delivered of a well-formed child weighing five pounds. The girl had none of the developments of a woman, although she had menstruated regularly since five years of age. The labor was short and uneventful; two hours afterward the child-mother wanted to get up and dress, and would have done so had she been permitted. There was no mammary development nor secretion of milk, and the baby, which only lived a week, was nourished by its grandmother, who then had a child but a few months old. At the time the report was made, Gleaves said the child-mother was well, playing about with other children as if nothing unusual had happened.

Before a recent meeting of the Louisville Medico-Chirurgical

§ Vratch, quoted by Medical Age, Detroit, Mich.

|| See also Legal Medicine (Herold), 1898.

* Legal Medicine, loc. cit.

Society cases were reported by Drs. Bullock and Cecil (one each), where there had been noticed a discharge of dark, venous (evidently menstrual) blood from the vagina of infants one week old, which continued five days. In each case, close examination failed to disclose source of the hemorrhage, and no cause, except precocious menstruation, could be assigned. There was not in either case an abrasion of the vaginal mucous membrane; moreover, the blood was dark, not arterial in character, and had every appearance of the menstrual discharge. While these cases were not recorded as positive instances of precocious menstruation, no other explanation, it seems to the writer, can be offered. One case was observed for a month, and there was no return of the loss of blood. In the other, sufficient time has not elapsed to determine whether there will be a recurrence of the discharge in the customary twenty-eight or thirty days. In neither case was there any abnormality or over-growth of the mammæ or external genitalia.

According to *L'Union Medicale*† the reports of menstruation in infancy and childhood, which are so often made, are not to be too readily accepted. Comby found ordinary vulvo-vaginitis sometimes accompanied by distinct hemorrhages. In children two, three, and six years of age, cited as instances, he found that the blood came not from the uterus, nor from the vagina, but from vascular granulations about the meatus urinarius, which bled freely if touched.

If this explanation of the occasional loss of blood from the vagina of infants and children be accepted as correct, then we may, with perfect propriety, question many of the cases recorded as precocious menstruation, especially when unaccompanied by data as to condition of the external genitalia. In the cases referred to recorded by Drs. Bullock and Cecil, however, careful inspection of the external genitals failed to reveal any local or other cause for the hemorrhage, therefore the conclusion is at least reasonable that in these cases the discharge was menstrual in character, and that precocious menstruation does sometimes occur in infants one week old or even earlier, but it must also be admitted that all such instances are probably *lusus naturæ* only semi-occasionally observed. If there is true menstruation in such cases, similar to that which takes place in adult life, it would be interesting to know whether (as

†Quoted by Medical Age, Detroit, Mich.

claimed by one author quoted) ovulation also occurs, and whether it would be possible for such infants to conceive, i. e., whether impregnation could be artificially produced; of course coition and consequent impregnation in the normal way would be manifestly impossible. In this connection, however, it may be well to state that the *consensus of opinion* among intelligent observers is that ovulation and menstruation are not dependent upon or connected with each other, except that they may occur simultaneously. Indeed, numerous cases have been recorded where pregnancy has taken place before establishment of the menstrual function. On the other hand, post mortem investigations have revealed that ovulation occurs late in life, sometimes long after cessation of the menses.

When pregnancy occurs at a very early age, delivery is sometimes attended by grave complications, resulting in death of the mother or child, or both. Uncomplicated cases are exceptional, for which no explanation is offered except practical undevelopment of the mother and disproportionate size between the fœtus and the pelvic strait. While it is true that similar complications are not infrequent concomitants of labor in older women, this contribution is not intended to include cases where patients are over fifteen years of age.

Pregnancy, whether advancing to full term or resulting in abortion (induced, spontaneous, criminal or otherwise), is comparatively rare before the age of fifteen years, therefore isolated cases, emanating from reliable sources, should not be allowed to pass unobserved. In the colored races pregnancy is said to occur, as a very general rule, much earlier than in the white, but authors ordinarily do not state whether their cases are white or black—an unfortunate omission.

The following case, recorded by Gossett,‡ is of unusual interest: The author states that it was a very difficult case of transverse presentation delivered by podalic version. February 8, 1898, in response to a call which came to the Obstetrical Department of the Louisville Medical College, several students went to see the case, which proved to be one of labor, and, recognizing an abnormal presentation, they notified Dr. Gossett, who went to see the patient at once. He found a colored girl, fourteen years of age, who was suffering

‡ Louisville Medical Monthly, 1898.

intensely, and had had labor pains for a week. The membranes had ruptured five days previously. He could hear no fetal heart sounds, nor could he detect fetal movement, although the mother claimed she felt movement early that morning.

The shape of the uterus indicated a transverse presentation. Intermittent uterine contraction had ceased, and the uterus was in a state of tetanic action, making version a difficult and dangerous operation. The cervix was dilated to the size of a silver quarter, permitting the introduction of two fingers, by which a diagnosis of left scapulo-posterior position was made. His plan of treatment was quickly outlined, viz.: to place the girl thoroughly under the influence of chloroform, practice manual dilatation of the cervix, then podalic version and extraction of the child. The cervix was found exceedingly resistant, requiring fifteen minutes for sufficient dilatation to introduce the right hand, which was passed to the anterior portion of the uterus, the palm directed toward the symphisis pubes. The limbs of the child were found extended. The left limb was flexed and the foot brought down, the left foot coming anteriorly, throwing the left thigh of the child into the left anterior plane of the pelvis. He then waited fifteen minutes to see if nature would complete the delivery. No labor pains coming on, and knowing he would have to complete the delivery, he again introduced his hand, flexed the right limb and brought the foot down, thereby throwing the right thigh of the child into the right posterior plane of the pelvis. The thighs, having entered the right oblique diameter of the pelvis after rotating, the abdomen of the child was directed toward the right side of the mother. In the absence of pains, traction was made on the child every two or three minutes. When the lower angle of the scapula appeared in the opening, he felt for the elbows, finding the arms extended alongside of the head. First, the right arm was flexed and delivered posteriorly, then bringing the right arm over the child's back, traction toward the left side revolved the body, throwing the left arm posteriorly into the hollow of the sacrum, which was then flexed and delivered. The sub-occipito bregmatic diameter of the head was then thrown into the left oblique diameter of the pelvis, causing rotation of the occiput to the front, the face posteriorly into the hollow of the sacrum. The head was then delivered by flexion, the chin coming over the perineum first, followed by face and forehead.

The soft parts were very resistant, and there resulted a laceration of the cervix uteri and of the perineum, through to the sphincter, also a laceration upward on the left side of the vagina for about two inches. The lacerations of the perineum and vagina were repaired at once, which Gossett believes should always be done; it is customary, however, not to repair the lacerated cervix until after the expiration of two or three months, which is a rule he invariably follows.

When the patient recovered from the influence of chloroform she was very weak and cold; hypodermatic injections of strychnine and whiskey were given; hot bottles were also used. Result from repair of lacerations was excellent. Two sutures in the vaginal wall suppurated, but taking into consideration the unfavorable surroundings of the patient, this was not unexpected. Preparation of the patient, delivery, and repair of the lacerations, consumed two hours.

The diagnosis of a transverse presentation is easily made, but diagnosis of the position of such a presentation often difficult. It is important to know the position in order to understand in what direction to pass the hand.

Manual dilatation of the cervix in this instance was difficult and tedious; but in such cases, if the operator is persistent, he can dilate the cervix sufficiently within twenty minutes. One should always be careful in flexing the limbs, as there is danger of rupturing the uterus, etc. It is best to always bring down only one foot, and make traction, leaving the other to assist in greater dilatation of the cervix. In this case, however, owing to resistance of the soft parts and smallness of the pelvis, there would have been trouble in making the child enter, therefore the second foot was also brought down. (Gossett.)

The most important details of the above case are omitted, viz.: the ultimate result to both mother and child. And it may be said that similar criticism will apply, in greater or less degree, to medical literature generally. Authors seem inclined to report their cases incompletely, prematurely, from biased or prejudiced premises, thereby rendering their reports almost valueless from the standpoint of reliable statistical information.

Cecil of Louisville saw, in consultation, and recently reported to the Louisville Medico-Chirurgical Society, the case of a girl

fifteen years of age, who was instrumentally delivered of a dead hydrocephalic child after an exceedingly tedious and complicated labor. The girl had puerperal convulsions at the time. There was a face presentation, and forceps were repeatedly applied with negative results. Craniotomy was then practiced, and delivery completed. There was a large hematoma of the vulva which was ruptured during delivery, resulting in smart hemorrhage. A complete laceration of the perineum occurred. The author says the case is interesting in several respects; (1) the age of the woman, (2) the hydrocephalic head which would not enter the canal, (3) inability to keep forceps upon the head, (4) the opening then drawing down and delivering the head, and (5) the ruptured perineum, which was repaired at the time. Since the case was reported, we understand personally from the author that the girl died a week or so later, presumably from continuation of the puerperal eclampsia, uremic and septic symptoms being pronounced at the time of the delivery.

From the literature cited, it will be seen that cases of precocious menstruation and precocious pregnancy, while not common, are not infrequently encountered; in any event, that such instances are not as rare as a perusal of modern text books would lead us to infer. Indeed, the majority of so-called "authorities" devote little or no space to consideration of these subjects.

The etiology of such precocity seems absolutely unknown, so little can be said except to review the literature, which is given for what it may be worth.

Equitable Building.

CLINICAL REPORTS FROM THE MEMPHIS CITY HOSPITAL.

BY P. M. FARRINGTON, M.D.

MEMPHIS.

Surgeon-in-Charge City Hospital; Assistant Professor Physical Diagnosis Memphis Hospital Medical College.

R. H., colored, aged 38, admitted July 10, 1898. He was at work on a railroad in Kentucky, and had his skull fractured by a blow from a mattock, and was brought to Memphis three or four days after the accident. When admitted he was unconscious. The wound had had but one dreessing, if half an ounce of powdered campho-phenique powder into the open wound could be dignified with such a name. Temperature 104°.

Brain matter, together with broken-down clots, had oozed through the imperfect dressing. The scalp was shaved and thoroughly cleansed, and upon removal of a gummy mass, made up of campho-phenique, brain matter and blood, a deep depression was found. The lines of fracture were followed up with the knife, and were found to extend, above, to the median line one inch posterior to the coronal suture; below, to the center of the temporal bone. On the left side of the skull, over the anterior portion of the parietal bone, several small pieces of bone, together with one large piece, oblong in shape, about an inch and a half in length by an inch in breadth, which had been turned and driven into the brain substance, were removed. Much brain matter came away when the bone was lifted out. The edges of the bone, which were rough and jagged, were thoroughly smoothed with the bone curette. The wound was wiped out with sterilized gauze, and a pad of iodoform gauze placed over the opening to prevent bulging. The dressing was then put on and the patient placed in bed.

The fever dropped within the next few hours, and reached normal about the second day. The patient was nourished by milk enemata, together with a small portion of milk by the stomach. Consciousness was not restored until the fourth day, when the patient very promptly tore away our bandage, and was found by the nurse a few moments later with the wound thoroughly exposed. Fever for a few days followed this accident, and a small amount of pus was drained from the wound. The patient's mind was affected to a marked degree, and he remained in a stupid condition for two weeks; so much so that he had to be aroused at intervals for nourishment. For the first ten days after operation complete paralysis of the right arm and leg, together with facial paralysis, existed. At the end of this time restoration began. At the present time the patient can walk up and down stairs and about the hospital building with comparative ease. The arm has been so much restored that he can place the hand upon the top of his head. The wound had closed entirely when the patient was discharged from the hospital on October 17th.

Mr. E. L., German, admitted to the hospital March 31, 1898, from Arkansas. The following history was obtained: In June, 1894, he contracted gonorrhœa. The usual injections were made use of, and, two months after his first symptoms, bladder trouble developed, and with such severity that he was unable to void urine. At that time the urine had to be drawn with small catheters. The following October he was confined to his bed for three weeks, during which time he was treated for stricture, catheters being passed each morning. The bladder, during this time, was washed each day. He was then dismissed as cured. Treatment was instituted the following summer (1895), steel sounds being used for five weeks with temporary relief, but he was forced to resort to the sounds again the succeeding year. Urination at this time was very painful, and the urine passed every half hour during the day, and sometimes sixteen times at night. In 1897, steel sounds were again used for one month, but with little or no relief. Malarial complications developed, and the treatment had to be discontinued. On March 2, 1898, severe pain was experienced in the perineum, and on the 9th a rather large abscess was opened by the physician under whose charge he was at that time. Fistulous tracts, leading from the urethra, drained most of the urine through this abscess, very little, if any, being passed through the normal channel. On April 1st he was operated upon. The abscess, which had formed about one inch from the median line of the perineum, was freely opened, and the fistulous tracts divided, until the urethra was reached. The relationship of the parts was very much interfered with, because of the immense amount of inflammation that had taken place. The

strictures, of which there were three, were then divided, and sounds passed into the bladder. The fistulous tracts and abscess walls were thoroughly curetted and packed. A rubber drainage tube was introduced into the bladder through the perineal opening. The patient remained in bed five weeks. Two weeks after operation urine passed continuously; after that time, at intervals of one hour, and the patient gained strength rapidly. The perineal wound has closed, and urine has to be passed about every two hours during the day and two or three times at night. The control of the bladder is perfect, and no pain whatever is experienced during urination. Sounds, at present, are passed once each month. The bladder has a capacity of but three ounces, due to inflammation of long standing and subsequent thickening of its walls.

A patient having suffered four years with strictured urethra and inflamed bladder, unable during that time to work, and having experienced great pain almost constantly, can now do a hard day's work, suffers no pain, and, though the capacity of the bladder has been very much diminished, has perfect control over urination. We consider such a result fairly good.

Haig's Uric Acid Theory.—(1) When there is an increase in the alkalinity of the blood there is also an increase of uric acid in the blood, while a reduction in the alkalinity of the blood results in a precipitation of uric acid in the tissues, especially the liver and spleen. With a decreased alkalinity, there is a corresponding increase in the acidity of the urine, which therefore indicates the condition of the blood. (2) The ratio of the formation of uric acid to urea is constant. Urea is eliminated as formed, and as the relation of uric acid to urea in the urine is variable, this variability is accounted for by retention or excessive elimination of uric acid. (3) The uric acid daily excreted is derived from three sources: (*a*) that formed by nitrogenous metabolism along with some urea, about one of uric acid to thirty-five of urea; (*b*) uric acid and other members of the xanthin group introduced with the food; (*c*) that stored in the body with passes into the blood when alkalinity is increased.

THE

MEMPHIS LANCET.

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EDITORIALS.

TENNESSEE AND A NATIONAL QUARANTINE.

The all-absorbing question at this time in the minds of our people is prevention of a recurrence of the lamentable epidemic which now besets our fellow-citizens in Mississippi and Louisiana, and which may, any season, involve ourselves.

At this time yellow fever has spread over a great portion of the territory of the State of Mississippi; business in that State is paralyzed, and all travel between its towns is stopped; its citizens in large numbers are suffering for want of the very necessaries of life, and its government is begging for help from without.

The government of that State is now, to all intents and purposes, in the hands of the Board of Health, which is invested with more absolute authority than was ever before wielded by a health organization. Throughout the entire limits of a great State we see travel and commerce suspended, and great railroad enterprises, at a loss of hundreds of thousands of dollars, brought to a complete stop by the orders of this board.

We repeat, no health organization within our knowledge ever wielded such unrestricted power, and we may well ask what good has it accomplished? The disease has spread and still spreads, as though no board of health existed. Quarantine carried to an extreme never before known has, under the direction of the Mississippi Board, failed to accomplish the object for which it was intended.

We do not speak thus in a spirit of unkind criticism, but with a view of turning attention to the results which must of necessity ensue from the policy of intrusting the prevention and care of great epidemic diseases like yellow fever and cholera to sanitary organizations constituted as are our State boards of health. No matter what may be our political doctrines, whether democratic or republican, whether States' rights or the contrary, we must assuredly be satisfied now of the insufficiency of such organizations in times and under circumstances like the present.

We recognize the great value of, and necessity for, State boards in educating and in guiding the people of a State to the prevention of the extension of diseases generally. We would strengthen every State board in the country; would appropriate ample means for its support, and would endeavor to perfect the sanitary condition of every community in the State. But it does not come within the province of such organizations to prevent the invasion of disease from foreign countries; nor are they competent to deal with diseases like yellow fever and cholera, which rapidly spread along the lines of travel and commerce and invade large areas of territory.

What then shall we do?

Some of our best citizens say they are in favor of a coast quarantine in the hands of the General Government; but they are afraid to trust the Government with internal and interstate quarantine. Let us reflect upon this, for we are now at the parting of the ways.

It has been said for years that there can be no safety from yellow fever until sanitary laws are rigidly enforced in Havana. Look at the sanitary condition of New Orleans. A few years ago Dr. Joseph Holt, who was then Sanitary Inspector, and afterward President of the Board of Health at New Orleans, describes the situation thus:

"It is not asserting too much to declare that our vaults are the most dangerous enemies of our lives and happiness. There is hardly one in New Orleans but whose contents have free access to the soil, to saturate the ground with liquid ordure. Thousands of them were originally huge boxes or wooden tanks, but are now only common sinks or pits in the ground, with hardly a vestige of woodwork left. * * * During wet weather these vaults or sinks quickly fill with water, and overflow, flooding yards and gutters with ordure. Under a sun almost tropical one-half of the year, this ferments and emits an abominable stench which, of all others, must be an awful source of disease, operating directly in its production, and indirectly in lowering the vital stamina of the inhabitants. While in wet seasons these vaults are flooded, in dry weather they are largely emptied by their fluid contents soaking into the ground, thus

saturating the soil upon which we live, with human excrement. In this respect it may be properly stated that the people have a huge privy in common, and that the inhabitants of New Orleans live upon a dung heap. Is it possible to imagine a sanitary condition more deplorably bad? That epidemic diseases should sweep at times, is no marvel. It is a righteous retribution for violated laws."

Can Havana be much worse than this? Does anyone claim that the condition of New Orleans has been materially improved since this was written? This were impossible without sewerage and a pure water supply. Is it not well known that yellow fever was harbored in New Orleans all of last winter? Will New Orleans build a system of sewers and cleanse herself? Probably not until forced to do so by outside pressure. Outside pressure is even now contemplated, and will be instituted early next summer by the people north and west of her in the way of quarantines obstructing commerce. This policy will be a ruinous one to New Orleans. It will prove disastrous to Mississippi and Louisiana, because it will be ineffective in excluding yellow fever, as it has been this year, and we in Tennessee will recognize the conditions there as a continual menace to our own safety.

If this subject is intrusted to the care of the General Government the real situation in New Orleans will be exposed to the light of day; and the suicidal policy of concealment and of disregard of internal sanitation pursued until now by that city, will be changed. Furthermore, the annexation of Hawaii, of Porto Rico and of Cuba to the territory of the United States will involve regulation of the commercial relations between these countries and the now-existing States by the General Government; and this in no more important particular than as regards the enforcement of measures to prevent the dissemination of infectious diseases.

In our opinion we can well afford to abandon States' rights views in this regard, and take the steps necessary to remedy an evil which for a half-century has been ruinous to our interests and a blot upon our civilization. It certainly behooves us to note that our course in this matter has already placed us in an unenviable light before the other sections of the country. The *Washington Post*, after describing the Mississippi situation in a somewhat exaggerated and sensational manner, says:

"No word of ours can do even partial justice to this frightful, this inconceivable situation. No such absolute extinction of civilization has occurred within the century. All this in a State whose official representatives last winter proclaimed their repudiation

of Federal interference in the matter of quarantine, boastfully paraded their ability to take care of themselves, and impudently declared that their science, their courage, their experience and their wisdom were more than equal to any demand that yellow fever could make upon them."

The Commercial Appeal adds:

"Other papers take the same view, and the people of the States affected are looked upon as very savages."

The protests, the denials, the denunciations by the *Commercial Appeal* of such statements will not avail. These impressions have been made upon the minds of the people of other sections, and nothing will change the opinions of our neighbors but a change in our way of dealing with this situation. Next year, and for years to come, unless we radically change our policy, the South will be regarded as half-civilized, and as unsafe for a white man to live in. No matter what we may think of ourselves, this is the light in which we will be regarded by others.

The burning question today for the people of Tennessee to decide is, Shall the General Government have control of sanitary affairs in the Mississippi Valley? or shall the momentous interests involving the lives and property of five millions of people in four States be still intrusted to the keeping of the health boards of New Orleans, Jackson and Mobile?

That Tennessee shall intrust her sanitary interests to the hands of the governments of Louisiana and Mississippi is a proposition too preposterous for consideration—yet this is what Tennessee will now do unless she demands a national quarantine.

It is well known that there already exists a national quarantine law. It is equally well known that, under existing circumstances, this law is practically inoperative, that it affords us no protection, and that the control of quarantine is in the hands of the State boards of health. In view of this well-known fact, the American Medical Association, which represents the most enlightened medical opinion in the United States, after several years of study and deliberation, has formulated a measure by which the general subject of quarantine shall be placed under the control and direction of a separate and distinct department of the Government, to be known as the Department of Public Health, and to be conducted in the same manner as is the Department of Agriculture. This bill, which was presented to our people a year ago through the columns of the

daily papers, and copies of which were sent to our Senators and Congressmen, recognizes in an equitable manner the State and municipal health organizations, and provides for their coöperation with the National Government in all matters pertaining to interstate sanitation. This bill has been endorsed unanimously by the American Public Health Association, a body of enlightened and scientific men who have devoted their lives to the study of sanitary affairs; but its passage through Congress has been antagonized and defeated mainly by the efforts of the Marine Hospital Service, which has been backed up by political influence, and aided by the jealousy of the State boards already alluded to.

The fact which we wish to place in a clear light before our people is, that the two most enlightened medical organizations of this country, viz., the American Medical Association and the American Public Health Association, have most emphatically signified their disapproval of the existing legislation which places the control of quarantine in the hands of the Marine Hospital Service; and these great representative bodies of the United States have done their utmost to induce Congress to annul the existing laws, and to place the entire subject of national and interstate quarantine under the control of a Department of Public Health.

The establishment of such a department would mark a great stride in civilization for the United States. The benefits derived from it would not be limited to the exclusion of yellow fever and cholera from our shores. Its influences, by educating the people of our country, would be seen and felt in many ways. Our homes, our towns, would be beautified; the ugly spots, the eyesores which disfigure all our cities, would gradually disappear, and the health and morals of our people would improve. R. B. M.

THE RELATION OF THE MEDICAL PROFESSION TO LIFE INSURANCE COMPANIES.

Trying to get something for nothing is one of the evils of the age, which is rapidly on the increase, and nowhere is it shown to greater extent than in the attitude of life insurance companies to the medical profession. To pay a physician the ordinary fee of $5 for the examination of an applicant brought to his office is but just to both sides, but as competition waxes greater, the agent is more

anxious to get his man examined at once, and not only insists that all else be dropped by the physician to attend to him, but he makes appointments for an examination at the applicant's home or place of business, without consulting the physician, expects the physician to go to the applicant's place of business numbers of times when appointments made are broken by the applicant, and complains loudly to the company when the physician does not cheerfully and readily answer all his demands. We have, on numerous occasions, known of two, three, and even four calls being made upon an applicant before finding him in, and then two or three examinations of the urine made, for which additional work no additional pay was offered.

A few days ago we received from a company for which we are not the examiner a printed form, stating that we had, a year ago, treated Mr. ——— for some ailment, and the company would like to know the exact nature of the disease, what effect it would probably have on his physical condition, and how it would affect him as a risk for insurance. Several weeks ago we received a personal letter from the medical director of a large company, stating that Mr. ——— of Memphis had been examined for his company in a small town in Mississippi. As the applicant had been refused by several companies, and was personally known to us, he would like to know any information about him which we possessed. In return for the information, although not the company's examiner, we were to have the privilege of examining him if a reëxamination was deemed necessary.

In replying to these communications what is a physician's duty to his patient? What is his duty to himself? And what is a just and courteous reply to the company?

A physician is not at liberty to impart such information concerning a patient without the patient's consent. It may be thought that the patient implies his consent in referring the company to the physician for his opinion, but he may not have been informed by the physician, or may be under an erroneous impression as to what the opinion is, and certainly would not be liable to give his consent if the opinion were adverse to his acceptance as a risk.

Even if his opinion be favorable to the patient's acceptance, the physician is under no obligation to assist the patient to obtain insurance without being remunerated for it. Granting that the

physician be right in demanding his fee, it is obviously the company who should pay it, as it is the one desiring information and is benefited by it.

A physician's knowledge and time are his capital, and it is his duty to himself to see that a just return is made for knowledge imparted and time spent. It is not only a duty to himself, but a duty to his brother practitioners as well, for by not impressing others with what are his just dues, he belittles his profession and lowers its standard by starting precedents and helping to maintain customs which detrimentally react upon others who are probably less able financially than he to follow them.

From no body of men outside the medical profession is so much asked or rather, demanded, in general without a thought of recompense. Such has always been the case and such will it continue to be until the profession as a body take the matter in hand and apply the remedy. In reply to insurance companies, therefore, it is courteous, and but just, to state that we feel under no obligation to either patient or company to give the desired information without what we consider a just return.

"THE AMERICAN SOCIETY FOR PRESS REFORM," AND THE DIRECTION IN WHICH PRESS REFORM IS NEEDED.

We have received the following communication, which explains itself:

THE AMERICAN SOCIETY FOR PRESS REFORM.

WASHINGTON, D. C., October 1, 1898.

DEAR SIRS—Believing that the future welfare and stability of our government depends upon the suppression and correction of certain so-called liberties of the public press, such as the publication of all crimes in detail, with accompanying illustrations, suggesting to untutored, undeveloped, and diseased minds the committal of like crimes; also the attacks in public print upon men whom we have honored with high places, and to whom we owe respect, loyalty, and protection in the interest of good government; and the interference with and exposure of government plans in time of war and peace, * * * we are organizing a society of Americans for the purpose of bringing about press reform, and respectfully ask that you become a member of this organization. * * *

Respectfully yours, STANLEY WARREN,

908 McPherson Square. *Secretary and Treasurer.*

We are sure all will agree that the aim of such an organization is highly commendable, although we are compelled to admit that

the accomplishment of that aim will probably never be attained while the daily papers pride themselves on publishing "all the news," and will probably bring their combined influence to bear against the passage of any law to curtail their liberty in this respect. But there are other practices to which they are addicted, and which, to our mind, are a greater evil than the publication of the details of crimes, criticism of officials and the betrayal of State secrets. The greatest of these is the unbridled freedom with which they print advertisements of means for the prevention of conception, advertisements of abortionists and remedies intended to induce abortions, and remedies for the cure of venereal diseases, "lost manhood," etc., expressed in such unmistakable terms that "he who runs may read." Ignoring for the present such of the latter as "Big G.", "H. G. C.", and others which defile fences and which should debar the daily papers which publish them from the use of the mails, we wish to make ourselves explicit on the subject of the abortionists. We copy the following advertisements which now appear in the daily papers of this city, and of other cities so near us that their papers are sold by newsboys on our streets. We withhold names and addresses, for obvious reasons, but can furnish the originals to any who doubt that they are genuine.

DR. ———, ——— st.—Home for ladies before and during confinement; irregularities from any cause successfully treated

DR. ———, Female Specialist—Ladies in trouble call or write; eighteen years successful experience; perfect seclusion during confinement. ——— st.

DR. ———, Specialist, ——— st.—Boards during con.; treats female diseases; ladies in trouble call or write; consultation free; low rates.

DR. ———, graduate in two colleges; 20 years' successful practice; ladies in trouble call or write; charges reasonable. ——— street.

GOLDEN SEAL, female regulator, superior to any other; relieves irregularities from any cause; sent secure from observation, $1. ———ave.

HOME for poor ladies during confinement; treats all troubles. Mrs. Dr. ———, ——— st.

LADIES' Monthly Regulator never fails; send 4c for Woman's Safeguard. ——— Med. Co., ———.

LADIES—Only $3 for complete treatment; city or country. Ad. G 29, ———.

LADIES everywhere use ———'s French Capsules, the great French regulator; absolutely safe; disappointment impossible; send stamp for sealed particulars. ——— Chemical Co., ——— st., Chicago.

MRS. ——— receives during confinement; treats irregularities; satisfaction guaranteed; honest dealings; information free; experienced in diseases; ladies in trouble call. ——— st.

MRS. ———, ——— ave.—Ladies' doctor; ladies in trouble call; no medicine.

MRS. ———, Midwife—Ladies in trouble call or write; boards during and after confinement. ——— st.

OLD DR. ———, ——— ave.—Lady or gent in trouble from any cause call or write; 40 years' experience; guarantee results.

THE ——— Regulator does the work; pleasant, reliable, healthful; satisfactory results guaranteed; one trial package free. ——— Remedy Co., ———.

LADIES—If in trouble, save time and money by calling at ——— ave.

LADIES—Dr. ———'s Regulator never fails; trial treatment free. ——— st.

LADIES—My regulator never fails; one complete treatment free. Mrs. ———, ——— ave.

LADIES in trouble will not regret calling at ——— st.

LADIES—Do not be embarrassed in your trouble; go where there is no sign out. ——— st.

MARRIED LADIES—Mrs. Dr. ———'s celebrated Egyptian Female Regulating Pills are sold only by the following druggists: ———, ———.

LADIES— ———' English Pennyroyal Pills (Diamond Brand) are the best; safe, reliable; take no other; send 4c, stamps, for particulars, "Relief for Ladies," in letter by return mail; at druggists. ——— Chemical Co., ———.

DR. ———, specialist in all female irregularities and suppressions; exclusive methods; positively painless; success guaranteed in every case or no charge; safety assured; consultation free; confidential; confinements; adoptions. ——— st.

DR. ———'s Monthly Regulator has brought happiness to hundreds of women; never had a single failure; positively safe; longest cases relieved in five days; price $2. Dr. ——— Co., ———.

We repeat that these are not taken from papers of the lowest class which pander to sensation lovers and "sports," but from papers that aspire to be considered first-class, and which find their way to all our houses. Could anything be more villainous? We wonder if the owners and managers of these papers are conscious of their enormity. We wonder if our legislators ever take their minds from a contemplation of their chances for re-election long enough to realize that such practices are an offense against decency; that the fulfillment of the promises made in these offers are crimes against the State, and the papers which give publicity to these people and these agents are "accessories before the act."

The arrest of a notorious abortionist in this city recently for the production of a criminal abortion is fresh in our minds, and yet these people openly announce their willingness and ability to perform the same crime. It is against the laws of Tennessee to sell a certain class of firearms for fear they might be used by man against his fellow. Yet these people advertise the fact that they are ready and willing to destroy the fœtus in utero, whom we recognize as a living being, and by methods which we know are fraught with danger to the life and health of the mother.

If I parade the streets with a loaded weapon, breathing vengeance against my neighbor and avowing my intention to kill him if the opportunity is offered, I will certainly be gathered in by the strong arm of the law and put where I can do no harm. Why then may these creatures parade themselves and avow their intentions to commit murder without let or hindrance? Such things

should not be. But such things are, and have been, and will be, till the moral sense of the community rises to a plane which it now does not know. The financial return to the paper which published these advertisements is probably not five dollars an edition, and yet for this "Judas coin" the owners and managers prostitute their souls, insult their patrons and fling defiance in the face of the State.

We doubt if the publication of these facts will deter a single paper from accepting such advertisements, or influence a single person to withdraw his patronage from such as do. So long as the law does not forbid it, so long as "lovely woman stoops to folly" and is willing to pay to be shielded from its consequences, so long as these people are prosperous enough to pay for space in the paper, just so long will these outrageous advertisements continue to appear.

[Since this was written the *Philadelphia Medical Journal* has taken editorial notice of this same abuse.]

REPORTS OF SOCIETIES.

MEMPHIS MEDICAL SOCIETY.

STATED MEETING, OCTOBER 4, 1898. DR. T. J. CROFFORD, President.

Dr. E. C. Ellett showed a patient from whom he had *removed the ear ossicles for chronic suppuration*. The patient was a man of 50, who had a discharge from the right ear following an attack of otitis media in March of this year. In spite of almost constant treatment the discharge continued with the exception of four or five days in July. There was a good deal of pain in the right side of the head, and the ear itself was often painful. The drum was perforated and much inflamed. The operation was done to secure good drainage. The patient resisted the anesthetic, and there was marked congestion of the head in consequence, which caused free bleeding during the operation and obscured the field. The malleus and a large portion of the drum were removed and shown. The malleus was not necrosed. The subsequent treatment consisted in daily packing with iodoform gauze. Now, four weeks after the operation, the discharge amounts to a drop in twenty-four hours; the pain has gone; the hearing has not improved, and the patient complains some of vertigo. This is the first case in which Dr.

Ellett has seen this symptom, though it sometimes occurs, but is usually evanescent.

Dr. M. Goltman read a paper on *Superheated Air in the Treatment of Disease*, and exhibited the Frazier-Lentz apparatus to illustrate its application. The indications for its employment were briefly outlined, its use being especially advocated in functional ankylosis following fractures, sprains and joint effusions. The more acute the condition the better the results to be expected. The temperature of the machine should range between 270° and 380° F., and a treatment should last from fifteen minutes to one hour.

Dr. S. E. Rice asked if the perspiration, which was very free, would not become sufficiently heated to scald the parts. He also asked if the stiffness of a joint after being relieved by a single treatment, will return.

Dr. G. G. Buford said he had seen the statement that the heated blood would dissolve the salts deposited in the joints, and therefore the stiffness would not return. He had seen it stated that this treatment would restore the resiliency of stiffened arterial walls. He asked if the whole body could be subjected to the treatment, and if any ill effect on the heart, such as sometimes follows a Turkish bath, had been noticed, and if the method was applicable to the treatment of bronchitis.

Dr. Alexander Erskine asked what would be the effect on chalk concretions in joints.

Dr. Goltman said that there can be no scalding if the proper care is taken and blankets used in wrapping the limb. This must be done in such a manner as to allow plenty of air space between the limb and the blanket, and also between the layers of the blanket—in other words, the covering must be loosely applied. The perspiration in the part subjected to treatment is very profuse, but is at once taken up by the blanket, and as it percolates through its meshes it becomes rapidly dried by the intense heat. Should moisture form on the inside of the machine, however, it will quickly disappear on opening the upper valves. Relief from stiffness in any part results through liquefaction and absorption of calcareous or other matter; deposition of such matter may again take place or all of it be not entirely removed by a single application; the results therefore bear a direct relationship to the character of the ankylosis and the amount of absorption that has taken place; the

relief is, therefore, one of degree, and is in his opinion permanent. As for restoring the resiliency of stiffened vessels, hot air might do so in the arm or leg; it could only indirectly do so in the larger vessels; he seriously doubts whether it could do so in the brain. Patients with pipestem arteries are bad subjects, from the fact that treatment increases the force of the circulation. The entire body including the head could not be subjected to hot air treatment at the very high temperature usually employed. At the Cook County Hospital he understands they have a coffin-shaped apparatus admitting the whole body except the head, and they report excellent results. Local applications have few contra-indications. Dr. Goltman treated an old lady 67 years of age with a marked mitral regurgitant murmur, with scarcely any inconvenience. It has none of the disadvantages of Turkish baths. It is applicable in all congestive conditions and therefore ought to be of benefit in bronchitis. Urquehart reports phenomenal success with it in the treatment of pneumonia in the early stage. Under the influence of hot air and regulated movements tophi soon disappear. He had evidence of this no later than this evening in quite an old gentleman, this being only his second treatment. Dr. Goltman's experience embraces cases of ankylosis from various causes—synovitis, teno-synovitis, sprains, bruises, and the after treatment of fractures—and results have been most happy.

Dr. Buford reported a case of *Hysteria Simulating Tabes.* The patient was a young woman of 21, weighing 185 pounds. During the past winter she had tonsillitis, and on the slightest exposure, neuralgia of the scalp. One day, at the table, she was taken with severe pains, especially in the legs, and had to be carried to bed. When seen the next day she was better, but had diminished knee jerks and tenderness over the sciatics and in the lumbar region. Her arms were unaffected. Under a placebo she was well in a few days. This occurred a month ago, and since that time she has had two similar attacks. Dr. Sale saw the patient in consultation and thought the trouble was hysterical, due to a cervicitis. Dr. Buford was not sure that this was the cause, but possibly only a coincidence.

Dr. Goltman reported a case of malaria occurring in a woman before, during and after her confinement, and affecting also the newborn child, as shown by blood examination. The child was prematurely born and deeply jaundiced. Quinin suppositories were

given at once with good results. Twenty-four hours later the mother developed chills and the child a temperature of 103°. Blood examination revealed malarial organisms. Quinin with urea was given the mother hypodermically and the child rapidly got well under suppositories of the hydrobromate in two-grain doses every four hours.

Dr. Richmond McKinney reported a case of foreign body in the nose. The substance was a piece of charcoal, and it was impossible to remove it with forceps. The child was anesthetized and the foreign body pushed back into the pharynx. Some of it was swallowed and some spat out. The condition was of eight or nine months duration and had caused a free nasal discharge.

Dr. B. G. Henning reported a case of *Typhoid Fever* in a young woman which began with a distinct chill without prodromes. The fever took on a continued type, and on the sixth day a hemorrhage from the bowels occurred, the amount passed being about a pint. She continued to pass blood with every movement, two to six ounces at a time, from Thursday until Monday, the temperature during that time being reduced and the pulse weak and rapid. Under a mixture of opium, nux vomica and ergot the hemorrhage ceased, and a healthy bowel movement occurred. The temperature at once went up to 105°. Dr. Henning spoke of the unusual occurrence of hemorrhage as early as the sixth day. He had carefully examined for a local cause, as hemorrhoids or fissure, but could find none.

Dr. Rice reported a case of *Malarial Hæmatemesis* in a boiler maker aged 20. He had a chill at 10 A.M., followed by fever, and at 8 P.M. a profuse hemorrhage, two quarts in amount, from the stomach. The blood was bright red and the patient weakened, with hardly perceptible pulse, and temperature 103°. Quinin hypodermically relieved the fever, and there was no further hemorrhage. There was no food given by the mouth for several days. Dr. Rice examined the blood but was unable to find the plasmodium.

Dr. Goltman mentioned a similar case in which the blood was not red, however, but dark. The man had a very hard chill last Thursday, lasting about an hour. He laid down and on attempting to rise felt sick at the stomach and vomited about a quart of dark blood. He was much prostrated and thought he had yellow fever. Blood examination showed estivo-autumnal parasites. The patient

rapidly got well under the hydrobromate of quinin. There was marked hepatitis and splenitis, which is rapidly disappearing. The urine showed a trace of albumin.

Dr. Henning also mentioned a similar case in a young woman who, after a chill, vomited two pints of dark-colored blood. She too was relieved by hypodermics of quinin. A later examination failed to reveal any ulcer or other local trouble.

In this connection he mentioned a patient whom he saw in consultation last spring. A young lady began to vomit in the night, and when he arrived had ejected a bowl of bright red fluid, presumably blood. There was no prostration, and a close examination of the vomit showed it to be full of strawberry seed. The red color was due to the strawberry juice.

In reply to a question Dr. Henning said that his first patient was so fleshy that moderate enlargement of the liver and spleen could not have been detected. He could not make out any enlargement.

Dr. Erskine reported a fatal case of *Congestive Malaria* in a stout negro man. He had had one or two chills, and had been treated with quinin. At 2 P.M. he began to have another, at 8 o'clock the pulse was imperceptible, and between that time and 12 he received sixty grains of quinin by the mouth and hypodermically. It was retained but had no effect whatever, and the patient died the next morning.

Dr. Henning mentioned a child whom he treated for persistent malaria, and who was unable to take quinin on account of it producing a dermatitis. He had not given it hypodermically, but in every form, including guaiaquin, without avoiding this effect. The malaria finally subsided, but subsequently reappeared. He was then able to cure the child with fifteen grains of dextro-quinin, without producing any dermatitis. The child has always been affected this way by other forms of quinin, and so has the mother.

Dr. Erskine mentioned similar happy results from dextro-quinin in patients in whom other forms produced urticaria.

MEMPHIS PATHOLOGICAL SOCIETY.

STATED MEETING, OCTOBER 15, 1898. DR. E. C. ELLETT, President.

Dr. Wm. Krauss exhibited *Three Pathological Brains:*

CASE I. Body of a colored woman who had been struck by lightning. No rigor mortis; panniculus very good; scalp bleeds freely on section; dura moderately adherent to calvarium; very marked congestion and edema; pial vessels enormously enlarged, and perivascular lymph sheaths contain bloody serum; subdural clot in posterior fossa; sub-pial hemorrhages over vertex, and more marked at base; no inflammation, and no sinus thrombosis; puncta vasculosa not numerous, but bleed freely; left ventricle full of bloody serum; right ventricle gone, and site, as also most of internal capsule and anterior of optic thalamus and tissues external, taken up by firmly organized blood clot which weighs about two ounces; gray softening all around same to within $\frac{3}{4}$ inch of parietal surface; no other lesions.

CASE II. The body of a moderately well-nourished man about 45 years of age. Rigor mortis; advanced pachymeningitis, especially under lambdo-saggital junction; edema; superior longitudinal sinus partly obliterated from contraction; perivascular lymph sheaths contain gas bubbles, serum and lymph; vessels injected; pia much thickened; interstitial lepto-meningitis; pial vessel enormously enlarged; firm contraction of pial sheath, specially marked at the fissures; in places pia as thick as dura; pia over cord firmly contracted, thick and brown of color; cortical substance pink; brain tissue very consistent; sinuses contain central thrombi; no inflammation; no evidence of old fracture.

We find, upon opening this brain, a large cyst, evidently in communication with the right ventricle. It is not an abscess, because the pus would have become hardened in the preservative, and the smoothness of the lining suggests a dilatation of the ventricle. You see, almost the entire hemisphere is hollowed out. This had been entirely unsuspected. The patient had been admitted to the hospital in a stupor, and died in a few hours, so that no history was obtainable. (Sections are being made).

CASE III. A man 40 years old, with a history of syphilis of twenty years standing. Lately he had developed degenerative symptoms, evidenced by lost reflexes, amnesic aphasia, and finally,

total paralysis of right side, ending in six months in death in convulsions. The entire left motor cortex is in a state of softening. (Transverse sections made). As we approach the paracentral convolution, the softened area becomes deeper seated, approaching but not involving the central ganglia. The entire brain is intensely hyperemic, suggesting general encephalitis. We expect to find an endarteritis syphilitica.

The President exhibited the following microscopical specimens:

(*a*) *Three Spindle-Celled Sarcomas of the Choroid.* This form of malignant growth is the most common found in the eye.

(*b*) *Melanotic Sarcoma of the Choroid* from a patient aged 26. This growth is also a rather common form, and is of interest from the fact that it is very prone to give metastasis to the liver, and hence offers a very grave prognosis. Attention was called to the fact that the pigment was brown and located in the cells.

(*c*) *Anthracosis of the Lung* and (*d*) *Anthracosis of a Lymph Gland.* These specimens were presented in contrast to the melanotic sarcoma, since here the pigment is jet black.

(*e*) *A Melanotic Sarcoma of the Axilla.* This growth was removed by Dr. R. B. Maury some years ago from a lady who subsequently developed a metastatic growth in the kidney from which she died.

(*f*) A rare form of sarcoma, namely, an *Alveolar Sarcoma of the Breast.* This was also from a patient of Dr. Maury's, and was removed three years ago. So far no return of the growth, either local or metastatic, has occurred. In this specimen the cells, lymphoid in character, are grouped in nests, like the cellular elements in carcinoma.

Dr. M. Goltman presented blood specimens from a child that was practically born with malaria. The mother had been having chills and fever for some time and had a severe chill at a time when her baby two years old was having convulsions. Quinin hypodermatically relieved both. Two weeks later she was delivered of a prematurely born baby markedly jaundiced. The next day the child was cross and fretful and showed a temperature of $102\frac{1}{5}°$ F. in the groin. The mother's temperature was $105\frac{1}{5}°$ F. The placenta had been adherent and septicemia feared. Blood examination showed a malarial infection, which was further verified therapeutically by the administration of quinin hypodermatically. The baby's blood was not examined, but under quinin the jaundice,

fretfulness and fever almost immediately disappeared, only to reappear twenty-one days later, when a blood examination disclosed malarial organisms in profusion. These together with the symptoms were again promptly dissipated by quinin and urea hypodermatically. The blood examined on the day after the quinin was administered shows a conspicuous scarcity of organisms when compared with the specimen of the day before. Two other members of the family were similarly affected.

Dr. B. G. Henning said that jaundice was common in young infants and disappeared without treatment, and was therefore not an evidence of malaria.

Dr. Goltman said that the child was born with the jaundice, which was unusual; that it was cross and fretful, and had fever; that it was prematurely born probably on account of the violent cough the mother had been having. The fact that other members of the family had been and were afflicted with malaria, that the mother was afflicted, and that the fever and jaundice rapidly disappeared from the child under quinin only to reappear again three weeks later, at which time, however, the diagnosis was made by blood examination, and clinically confirmed by the disappearance of all symptoms under quinin, go far to sustain the belief that the child was born with malaria.

MISSISSIPPI VALLEY MEDICAL ASSOCIATION.

Abstract of the Proceedings of the Twenty-fourth Annual Meeting, Held at Nashville, Tenn., October 11, 12, 13 and 14, 1898.

Dr. Chas. T. McClintock, of Detroit, Mich., read a paper on *Immunity.* Of late years a large part of the laboratory work in medicine has had to do with immunity. Many facts have been discovered, in a few instances of immediate practical value in the treatment or prevention of diseases. But for the most part, these facts are uncorrelated, often contradictory, their meaning not clear. Hypotheses have been advanced, but as yet we have no theory that will even approximately explain the facts of immunity. The future of work in this line is full of promise. For the infectious diseases, at least, immunity and cure are one and the same. A diphtheria patient will be cured only when its tissues are immunized against

the attack of the diphtheria poison. There are several kinds and various degrees of immunity. We have a natural and an artificial, or acquired, immunity; apparently these are entirely different in kind, dependent on different functions of the body, effected by different substances. There is racial immunity. Again, we have an immunity correlated with age. Variations in susceptibility are noted in different varieties of the same species, and even in different families. Again, there is an individual immunity. Still again, one part of the body, even one portion of the same tissue, may be immune, while the rest is very susceptible. These facts are not to be explained by general resistance, good health, etc. The most vigorous man may acquire smallpox or influenza. The healthiest cow is likely to take pleuro-pneumonia. To what extent an acquired immunity can be inherited is both an interesting and important question. This sort of immunity is usually lost, at least so far as our tests will show, before the animal reaches the adult stage. This inherited immunity is not the same as the immunity of the suckling. This is due to the fact that the immunizing bodies pass into the milk. The child receives from its mother not only food, but disease-resisting power. We have active and passive forms of acquired immunity. The horse producing antitoxin is actively immune. His tissues are producing antitoxin. The child receiving a dose of antitoxin is passively immune. It has borrowed the strength of the horse. There is an immunity to poisons. The wolf thrives on putrid flesh. Some animals are immune to snake poison. The insusceptibility of the morphine user may be something more than mere tolerance. The drug may be in part destroyed, and this anti-power may have to do with the craving for the drug. There is no antitoxin, but, in short, an immunizing body.

Dr. Geo. W. Johnson, of Dunning, Ill., has had some experience with nucleinic acid in the treatment of pulmonary tuberculosis in cases of mixed infection. He has noticed a diminution in the number of pyogenic bacteria, and asks whether the phagocyte attacks the tubercle bacillus the same as it does pyogenic bacteria.

Dr. McClintock replied that he knows of no reliable investigations that have been made with reference to that point.

Dr. Ernest B. Sangree, of Nashville, said it is believed by many investigators that the phagocytes eat live tubercle bacilli, and that

cases in which tubercle bacilli are included in the phagocytes have a better chance to get well than those which do not contain them.

Dr. Dudley S. Reynolds, of Louisville, is afraid that experimental observers have failed to note the necessary equilibrium between the circulating blood current and the lymph stream. Dr. Reynolds elaborated the theory of phagocytosis, and showed how phagocytosis can never be successful if obstructions exist in the lymph channels.

Dr. C. L. Minor, of Asheville, N. C., read a paper on *Hygiene versus Drugs in the Treatment of Pulmonary Tuberculosis.* Under hygienic and dietetic treatment the author embraces all such non-medicinal measures as are directed toward an increase in the vitality of the organism and of its resistance to disease, and remarks that climate therapy is but a branch of hygienic treatment, although he does not embrace it in his remarks, which are confined to the proper application to individual cases of exercise, gymnastics, massage, hydrotherapy, rest, sleep, diet, amusements, clothing, and quarters. A partial and unsatisfactory use of such measures is more or less general, but unless directions be definite and specific, they will fail of their purpose. The very common abuse of exercise was deplored, and the invariable rule stated, "exercise short of the point of fatigue," and the other of no exercise with a temperature over 100.4 degrees, following which no mistake can be made. The thing to be attacked is not so much the lesion in the lung directly as the lowered vitality of the body, the diminished capacity of the lungs, and the deficiency of appetite, and drugs directed to a conquering of the bacillus in situ are not to be compared with measures which enable the organism itself to acquire the strength to overcome disease. These things can be brought about best by an improvement in nutrition, which must, after all, come from the stomach, and an increase of the amount of oxygen taken into the lung.

Dr. S. C. Baldwin, of Salt Lake City, Utah, read a paper on *Congenital Scoliosis.* Scoliosis is first, the most common of all deformities. Second, it is most often found in children under ten, rarely beginning after eighteen. Third, it is found more often in girls in the ratio of five to one. Fourth, the etiology is in a large number of cases very uncertain. Congenital scoliosis is very rare. Tubley, of London, in the latest English work on deformities, says that he has

been able to verify only four cases. The case reported by the essayist was first diagnosed as scoliosis when the child was twenty-one months old, but the father had noticed the "lump" ever since the child was first washed. The interesting features of the case are that the curvature is in the lower cervical and upper dorsal regions. There is some pressure on the cord, as shown by the more or less deficient development of the right side. The convexity of the curve in this case is to the left. There is partial paralysis of the fore finger of the right hand, and sweating and flushing of the left side, but none on the right. The cause of the scoliosis in this case is thought to be the lack of amniotic fluid while in utero, probably allowing the muscular walls of the uterus to press on the fetus and hold it in a faulty position, and in this way cause a wedge-shaped development of the bodies of the vertebræ. This theory has been advanced by Weissenberg, Hirsh and Schauz in the last year. In this case the mother was very small, and passed at the time of confinement so little water that she did not know there was any, and felt no motion comparatively during pregnancy.

Dr. Samuel G. Milliken, of Dallas, Tex., has seen one case of scoliosis in a child under one year of age, but he is not prepared to say whether it is congenital or not.

Dr. Wm. L. Baum, of Chicago, read a paper on *The Therapeutic Value of Marmorek's Serum.* The deductions he draws from an analysis of the literature and his own experience are: 1. In pure streptococcic infections the serum undoubtedly exercises a favorable influence. 2. In the mixed infections the influence of the serum is noticeably demonstrable, but it merits further trial as an adjunct to other treatment. 3. Considering the grave character of the complications of a non-streptococcic nature reported, ordinary rules of therapeutics demand that in such cases, as with the diphtheria antitoxin, all indicated therapeutic procedures must be employed as well as the serum. 4. In view of the fact that erysipelas streptococci and phagocytes have been found to exist side by side in the lymph channels, it is fair to assume that the influence of the serum is directly exerted bacteriologically on the streptococci and not entirely through a stimulation of phagocytic action. 5. The initial dose in all cases should be 20 c. c., to be followed by 10 or 15 c. c., according to the indications, every twenty-four hours.

Dr. Chas. L. Minor said his experience is practically confined to

secondary infections in tuberculosis. He has used the serum of Parke, Davis & Co., with considerable satisfaction, and prefers it to Marmorek's.

Dr. Samuel G. Milliken has used anti-streptococcic serum in two cases, both of which terminated fatally. One was a case of abscess of the liver, the other a suppurative appendicitis.

Dr. Wm. K. Jaques, of Chicago, called attention to infections in the pulmonary tract that he has found to be purely streptococcic, and in such cases he has advised injections of anti-streptococcic serum with good results.

Dr. Baum, in closing, emphasized the importance of diagnosing the kind of infection present.

Dr. Albert Bernheim, of Paducah, Ky., presented a paper on the *Use of Unguentum Hydrargyri by the Mouth.* (To be published in the MEMPHIS LANCET).

Dr. Jas. T. Whittaker, of Cincinnati, delivered the address on medicine. He selected for his subject *Diabetes Mellitus.*

Dr. Andrew Timberman, of Columbus, O., read a paper on *Mastoiditis, When to Operate and How*, and concluded that operative measures should be instituted, 1. To preserve the function of hearing as well as to prevent a fatal issue. 2. Earlier in mastoiditis due to scarlet fever, diphtheria, and the worst cases of influenza, than when due to colds, measles, typhoid fever, etc. 3. In the acute cases of mild infection, when subsidence does not occur within, at most, eight days (Schwartze). A shorter period is safer in a virulent infection. 4. Recurrent mastoiditis due to any cause. 5. In mastoiditis complicating a chronic suppurative otitis. 6. In acute cases where there is a drooping of the lining membrane of the supero-posterior wall of the external auditory canal, carrying with it the membrane Shrapnelli; in chronic cases when at the same place a crater-like opening leads to the recessus epitympanicus and aditus and anthum, even though in neither case symptoms immediately menacing life be present. The author favors the typical or original Schwartze method of opening the mastoid antrum. Its success in given conditions justifies its application; its failure in given conditions has resulted in a more perfect procedure styled the Schwartze-Stacke, or radical operation.

[TO BE CONTINUED.]

NEWS AND NOTES.

Dr. W. B. Rogers has returned to the city.

Dr. T. J. Crofford has returned to the city.

Dr. R. B. Maury has returned from a vacation in the Northeast.

Dr. Chas. H. Sevier, of Brownsville, Tenn., died suddenly on October 1st.

Dr. Claudius H. Mastin, of Mobile, Ala., died October 3d, aged 72 years.

The quarantine which Memphis has maintained since Sept. 5th was raised on Oct. 21st.

Dr. John Maury left on October 22d, to spend a few weeks in the hospitals of New York and Philadelphia.

Dr. Alfred Moore, having recovered from a severe attack of pneumonia, has gone to New York for the months of October and November.

Dr. Frederick T. Rogers has retired from the editorship of the *Atlantic Medical Weekly* (Providence, R. I.), owing to lack of time, and the journal has consequently suspended publication. Its subscription list and good will have been turned over to the *Philadelphia Medical Journal.* We will miss the bright little *Weekly* from our exchange table,and regret the retirement of its able editor from medical journalism.

The meeting of the Mississippi Valley Medical Association was held in Nashville, October 11–14, and was well attended. The following officers were elected:

President—Dr. Duncan Eve, Nashville.
First Vice-President—Dr. A. J. Oschner, Chicago.
Second Vice-President—Dr. J. C. Morfit, St. Louis.
Secretary—Dr. H. E. Tuley, Louisville.
Treasurer—Dr. D. S. Reynolds, Louisville.

The next meeting will be held in Chicago in October, 1899.

The faculty of the University of Pennsylvania has recommended that Dr. James Tyson be placed temporarily in charge of the department of Medicine, with Drs. Musser, Stengel, Fussell and

Packard as assistants. The election of Dr. Pepper's successor is deferred. A similar arrangement was necessitated in the Surgical department by Prof. Ashhurst's illness, he having suffered a stroke of apoplexy. Dr. J. William White has charge of the teaching in this department, with the assistance of Drs. Wharton and Wood.

Mr. W. B. Saunders announces the following new medical books: Stengel's Text Book of Pathology.

Hirst's Text Book of Obstetrics.

The American Pocket Medical Dictionary.

Also new editions of the following:

An American Text Book of the Diseases of Children.

An American Text Book of Gynecology.

DaCosta's Modern Surgery.

McFarland's Pathogenic Bacteria.

Vierordt's Medical Diagnosis.

Griffith's Care of the Baby.

Butler's Materia Medica and Therapeutics.

About January 1st an American Text Book of Diseases of the Eye, Ear, Nose and Throat, by Drs. DeSchweinitz and Randall, and Mental and Nervous Diseases, by Church and Peterson, will appear. Mr. Saunders also announces the English edition of Lehman's Medical Hand Atlases. The coöperation of eleven publishers has been the means of placing these wonderfully artistic volumes on the market at a very low price (about $3 a volume). The plates are superior to those in many atlases costing ten times as much, and the text is full and modern. Atlases of Internal Medicine, Legal Medicine, the Larynx, Operative Surgery and Venereal Diseases, have already appeared, and others on the Eye, Skin, Pathological Histology, Orthopedic and General Surgery, Operative Gynæcology, Psychiatry and the Ear will follow.

The eleventh annual meeting of the Southern Surgical and Gynæcological Association, which was announced to be held in Memphis, Tenn., Tuesday, Wednesday and Thursday, November 8th, 9th and 10th, has been postponed till Tuesday, Wednesday and Thursday, December 6th, 7th and 8th, 1898, on account of the quarantine regulations in some parts of the South. The Gayoso Hotel has been selected as headquarters for the Association. The following is a partial list of the papers to be read:

1. President's Address—Richard Douglas, M.D., Nashville, Tenn.

2. Gunshot Wounds—W. E. Parker, M.D., New Orleans, La.

3. Electro-Therapeutics in Medicine and Surgery—Jas. McF. Gaston, Atlanta, Ga.

4. The Normal Position of the Uterus Defined—A. H. Buckmaster, M.D., Charlottesville, Va.

5. Abdominal Opening for Intra-Peritoneal Surgical Work—Jos. Price, M.D., Philadelphia, Pa.

6. The Choice of Material for Ligatures and Sutures in Gynecological Surgery—L. S. McMurtry, M.D., Louisville, Ky.

7. Repair in Cases of Complete Tear of the Perineum—Howard A. Kelly, M.D., Baltimore, Md.

8. Conservative Treatment of the Diseased Ovary—Jos. Taber Johnson, M.D., Washington, D. C.

9. Thoracotomy for Tumors Involving the Ribs—F. W. Parham, M.D., New Orleans, La.

10. The Use and Abuse of Normal Salt Solution—J. W. Bovee, M.D., Washington, D. C.

11. A Report of Fifty Prostatectomies, with Remarks on the Treatment of Prostatic Overgrowth in the Aged—John P. Bryson, M.D., St. Louis, Mo.

12. Remarks on the Surgery of the Gall-Bladder and Bile-Ducts—A. V. L. Brokaw, M.D., St. Louis, Mo.

13. Past and Present Surgery of the Gall-Bladder and Bile-Ducts—Wm. H. Myers, M.D., Fort Wayne, Ind.

14. The Pelvic Floor, its Functions, Injuries and Repair—M. C. McGannon, M.D., Nashville, Tenn.

15. When Should we Operate for Appendicitis?—A. M. Cartledge, M.D., Louisville, Ky.

16. Ureteral Anastomosis—Geo. H. Noble, M.D., Atlanta, Ga.

17. Ovarian Cysts as a Complication of Pregnancy and Labor—J. W. Long, M.D., Salisbury, N. C.

18. Incised Wounds of the Larynx—Edwin Walker, M.D., Evansville, Ind.

19. Tubal Pregnancy; Primary Rupture into the Broad Ligament and Secondary into the Peritoneum; Laparotomy, Convalescence Complicated by Septic Diarrhœa and Metastatic Abscess of the Liver—R. Matas, M.D., New Orleans, La.

20. Removal of Partially Descended, Infected, Strangulated Testicle, Complicated by Hernia—R. R. Kime, M.D., Atlanta, Ga.

21. The Diagnosis of Tubercular Peritonitis and Indications for Surgical Treatment—W. L. Robinson, M.D., Danville, Va.

22. Foreign Bodies in the Esophagus, with Report of Cases—A. Vander Veer, M.D., Albany, N. Y.

23. Penetrating Wounds of the Abdomen—Floyd W. McRae, M.D., Atlanta, Ga.

24. The Management of Pregnancy Complicating Intra-Abdominal Tumors, with Cases—Rufus B. Hall, M.D., Cincinnati, O.

25. The Rarity of Ovarian Tumors in Negresses—I. S. Stone, M.D., Washington, D. C.

26. Tumors of the Breast—W. F. Westmoreland, M.D., Atlanta, Ga.

27. Penetrating Wounds of the Chest—J. B. Murfree, Murfreesboro, Tenn.

28. Surgery of the Pelvic Organs Without Speculums or Retractors—W. H. Wathen, M.D., Louisville, Ky.

29. Report of a Case of Splenectomy for Wandering Hypertrophied Spleen—Wyatt Heflin, M.D., Birmingham, Ala.

30. Celiotomy in the Treatment of Retroverted Pregnant Uterus when Incarcerated —Henry D. Fry, M.D., Washington, D.C.

31. Odds and Ends in Pelvic Surgery—Walter B. Dorsett, M.D., St. Louis, Mo.

32. Treatment of Pelvic Inflammation—Jas. A. Goggans, Alexander City, Ala.

33. Mechanical Aids in Intestinal Surgery—J. D. S. Davis, M.D., Birmingham, Ala.

34. The History of Myomectomy—Chas. P. Noble, M.D., Philadelphia, Pa.

35. Observations upon Cranial Operations, with Report of Cases—Wm. Perrin Nicholson, M.D., Atlanta, Ga.

36. Plastic Surgery in Gynecology—W. D. Haggard, Jr., Nashville, Tenn.

37. Ventro-Fixation for Retro-Displacements of the Uterus—R. J. Trippe, M.D., Chattanooga, Tenn.

38. Removal of Five-Gallon Ovarian Cyst from Girl 17 Years Old—R. R. Kime, M.D., Atlanta, Ga.

39. Transpleural Hepatotomy by Resection of the Rib and Free Incision; Recovery —R. Matas, M.D., New Orleans, La.

40. Subject to be Announced—W. S. Elkin, M.D., Atlanta, Ga.

41. Surgery of the Stomach—W. E. B. Davis, M.D., Birmingham, Ala.

Members of the medical profession are cordially invited to attend.

BOOK REVIEWS.

Diseases of the Eye. By Edward Nettleship, F.R.C.S., Ophthalmic Surgeon at St. Thomas' Hospital, London; Surgeon to the Royal London (Moorfields) Ophthalmic Hospital. Revised and edited by W. T. Holmes Spicer, M.A., M.B., F.R.C.S., Ophthalmic Surgeon to the Metropolitan Hospital and to the Victoria Hospital for Children. Fifth American from the sixth English edition. With a supplement on Color Blindness by William Thompson, M.D., Emeritus Professor of Ophthalmology in the Jefferson Medical College of Philadelphia. Handsome 12mo. of 521 pages, with two colored plates and 161 engravings. Cloth, $2.25. Lea Brothers & Co., Publishers, Philadelphia and New York. 1897.

Nettleship is an old friend and an ever welcome one, whose popularity is evidenced by the number of editions which have been called for. Whatever was lacking in the first editions has been supplied until, in its present form, it certainly merits the wide favor it enjoys as a text book for students. The chapter on optics is very timely, and even the ophthalmic surgeon may read with profit the part devoted to the relation of the diseases of the eye to general diseases, and Dr. Thomson's excellent appendix on the examination of the color sense in railway employees. It is largely due to this gentleman's efforts, beginning in 1881, that the railroads now require applicants for positions to pass examinations as to vision, color sense, and hearing. The book throughout bears the stamp of a conservative and thoughtful mind. We hoped to see mention made of the homatropine and cocain disks used so much for refraction in this country, but the whole subject of the use of the mydriatics is rather briefly considered. Nor are any of the newer local anesthetics mentioned. We regret that one so well qualified to speak *ex cathedra* does not declare himself more positively on some of the mooted

points of the day, viz.: the amblyopia of squinting eyes, graduated tenotomies, Mules' operation and the extraction of the clear lens in myopia. The work is a good and safe guide, and the publishers have put it in an attractive dress.

A Text Book of Practical Therapeutics. With Especial Reference to the Application of Remedial Measures to Disease and their Employment upon a Rational Basis. By Hobart Amory Hare, M.D., Professor of Therapeutics and Materia Medica in the Jefferson Medical College of Philadelphia. With special chapters by Drs. G. E. de Schweinitz, Edward Martin and Barton C. Hirst. New (seventh) edition. In one octavo volume of 770 pages, illustrated. Cloth, $3.75; leather, $4.50, net. Lea Brothers & Co., Philadelphia and New York.

This new edition of Dr. Hare's work on Therapeutics is very representative of the march of medical progress. Always valuable and popular, but embarrassed in the earlier editions by crudities and inaccuracies, it has been gradually improved and corrected until today it is the foremost text book on therapeutics in this country. The clear, concise style of the writer, the double index, one for diseases and another for remedies, and the classification of drugs in accordance with their physiological action, renders it extremely useful as a book of reference. While the great mass of synthetic compounds recently placed on the market are not mentioned. those which have been shown to possess merit are carefully considered. The question of the serum treatment of disease is discussed in a conservative way. The antitoxin of streptococcus invasion is spoken of as of possible utility in certain cases where there is not a mixed infection, but diphtheria antitoxin is the only serum advocated as a specific to be used without other internal medication. This position is certainly sustained by the weight of medical opinion at the present time. Other serums may have effected cures in isolated cases, but these results have not been sufficiently uniform to constitute a successful treatment. The plan of the book is much improved by conforming to the British as well as the U. S. Pharmacopœia, as it obviates a frequent source of annoyance in the perusal of English works. The paper is of fine quality, printing clear and well arranged, and the general make-up excellent.

A Manual of Otology. By Gorham Bacon, A.M., M.D., Professor of Otology in Cornell University Medical College, New York. With an Introductory Chapter by Clarence J. Blake, M.D., Professor of Otology in the Harvard Medical School, Boston. In one handsome 12mo. volume of 400 pages, with 109 engravings and 1 colored plate. Cloth, $2 net. Lea Bros. & Co., Publishers, Philadelphia and New York.

This manual supplies the need of a book on diseases of the ear to stand between the quiz compend and the text book, and is intended for students and practitioners other than otologists, and is sufficiently elaborate to avoid the disadvantages which are possessed by most small works on special subjects. The relations of throat and nose diseases to those of the ear are constantly referred to, and the subject of adenoids and deflected septum and their treatment quite elaborately discussed. Much space is devoted to chronic aural catarrh, and the fact emphasized that removal of the drum and ossicles for this condition is not successful. In chronic purulent inflammation the operation finds its proper sphere of usefulness. We are somewhat surprised to find the author still advising the "wet treatment" for this condition, and regret that he does not express himself as to the value of, and the indications for, the treatment by gauze packing. The obsolete method of treating middle ear inflammations by "drops" is, of course, omitted, and the use of cocain and atropin solutions for the relief of

pain in the same condition might as well be. The application of so-called "Wilde's incision" is limited to those rare cases of primary mastoid periostitis, it being repeatedly stated that in mastoid disease attending middle ear disease the operation is not complete till the antrum and cells are explored, and this is especially true in the abscesses occurring behind the ear in children. The continuous use of cold in acute mastoid inflammation, as advocated by the author, is thought by most observers to be inferior to its intermittent application.

We think that he who finds it necessary to cocainize the nose to introduce the eustachian catheter (p. 73) had better not use that instrument, nor have we found it necessary to warm and oil the instrument before introducing it. We note the omission of a description of catheterization through the mouth, the use of yellow oxide of mercury ointment in eczema of the auricle, a method of producing a uniform whisper, and other minor points. But we know of no small book so full of useful information regarding diseases of the ear. The illustrations are plentiful and extremely well selected, many being original.

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ORIGINAL ARTICLES.

A STUDY OF TWELVE CASES OF MALARIAL HEMATURIA, INCLUDING FOUR AUTOPSIES.*

BY M. GOLTMAN, M.D., AND WM. KRAUSS, M.D.
MEMPHIS, TENN.

This essay is based upon the study of twelve cases, in which analyses of the blood, urine, feces and vomit were made, and includes four autopsies. We received eight calls outside the city, and the cases furnishing the four autopsies occurred in the city. Of the twelve cases seen by us, nine died. Three died during the height of the attack on the third, fifth and sixth days respectively. Six died after the hematuria had disappeared, that is, from two days to three months after the urine had cleared up and was passing in fair quantities. Uremia was the cause of death in at least three of these cases; three died suddenly, apparently of heart failure, after the urine was clear and regenerative changes were present in the blood.

Three cases occurred in females; two were sixteen, and one thirteen years of age. Two recovered and one died. One case occurred in a strong, robust, pure black negro, fifty years old, who had lived in the community forty years; he died. The other cases

* Being the report of the Sub-committee on Pathology of the Committee on Malarial Hematuria of the Tri-State Medical Association, read at the 1897 meeting.

occurred during vigorous manhood and adolescence. Four had had previous attacks. In one the fifth attack proved fatal, one died in the third attack, one in the second, and one recovered from the fourth. The other deaths were in first cases.

A severe chill, followed by fever and hematuria, was the usual mode of onset. In one case there was malaise for twenty-four hours, followed by bloody urine, chills and fever in the order named.

The triple symptom—hematuria, jaundice, vomiting—was present in nearly all cases. In one, a fatal case, there was only nausea together with the other symptoms; in another, which recovered, neither nausea nor vomiting occurred—this was a mild case in a girl sixteen years old. All cases showed more or less remarkable enlargement of the spleen. In nearly all the liver was enlarged and was, as a rule, more tender to manipulation than the spleen.

The tertian parasite was in most instances the predisposing etiological factor. The estivo-autumnal parasite, which is the one found during the hematuria, is probably a plus infection and the provocative agent giving rise to the hematuric attack. It may be already absent and generally rapidly disappears from the blood.

In every case but two the subjects showed every evidence of chronic malaria. One of these, although living in the swamps of Arkansas, claimed never to have had chills or fever and never had taken quinin. She had taken chill tonic.

The eliminative treatment was used in all cases, and in two quinin was administered by the attending physician; one of these did well, all of the symptoms being mitigated with the exception of the heart weakness, the urine cleared up and was passing in fair quantities, but he finally died. The other case in which quinin was used, although showing Laveran's organisms in abundance, promptly died on its exhibition. This must not be accepted, however, as an argument against the use of quinin (*vide infra*). Small doses of calomel frequently repeated and the saline purgatives are what we recommended as intestinal evacuants. It might here be wise to issue a word of caution as to the abuse of calomel. It must be remembered that mercury in large doses aids blood destruction.

We might say here, that an important index to the administration or non-administration of quinin is anticipation of the paroxysms of an acute malarial infection in the presence of chronic malarial cachexia. This anticipation occurring in spite of the ad-

ministration of quinin augurs well for a hematuric attack. We consider this point of considerable prophylactic value.

In the cases giving a history of previous attacks, the data with reference to quinin are complete, and of great therapeutic and scientific interest. According to the verbal statement of one patient, "he knew that hematuria was imminent, because quinin did not break up the chills." This bears out our own observations, as will be evidenced in the history of cases.

It would seem that the plasmodia have about this time gotten a firm foothold in the economy, which circumstance has of course reduced the vitality of the patient very much. The quinin is either not assimilated or the plasmodia are inured to the quantity used, and the result is anticipation and, finally, hematuria. Large hypodermatic doses of quinin (bimuriate with urea) may here avert hematuria, especially in the budding stage of the organism. Hematuria once established, and the fate of the plasmodia is secondary. They lose their pabulum and die with the destruction of the patient's blood. For example, in several cases a morning specimen of blood would show intra-corpuscular rings in profusion with a count of 3,250,000 and a hemoglobin estimation of 45 per cent. In the evening another specimen would show a few isolated extra-corpuscular bodies, no intra-corpuscular bodies, a blood count of about 1,250,000 and a hemoglobin estimate of about 20 per cent. Quinin is manifestly useless if not injurious in such a case. The patient is, so to speak, exsanguinated. The plasmodia are destroyed or their action inhibited through the poisons probably generated by their own metabolism. Therefore, at this critical period, leave the plasmodia alone and give all your consideration to the maintenance of your patient's vitality. This is not mere hypothesis but the result of careful observation and study. *We are therefore forced to the conclusion that, malarial hematuria once begun, quinin has no place in its therapy.* This, however, has no reference to the exhibition of tonic doses in the post-hematuric period.

Quinin hemoglobinuria is probably caused by the disintegrating effect of the quinin upon the intoxicated or injured corpuscles—in other words, a disintegrating effect upon a disintegrating tissue analogous to that occurring on the administration of mercury in syphilis, and may be likened to the specific reaction against bacterial toxins. The injudicious administration of quinin is often responsible for a hematuric attack.

The fecal examinations are interesting, in that they show bile coloring matter in abundance, but little or no bile acids. The black, tarry stools, ignorantly called "bilious stools," are not bilious; they are composed of reduced hemoglobin, cleavage products, such as hydrobilirubin, etc., fecal matter, mercurous oxid from the calomel given, and a large amount of mucus. The lining of the intestines is bile-stained, in some places more intensely and in spots, showing the existence of focal necrosis.

The urine shows much that is interesting. When fresh, blood cells are *nearly always seen*. On standing, the hemoglobin, in which they are already poor, is dissolved out of the corpuscles, and they are not seen. In fresh urine, however, their presence is appreciated. Coloring matter is always found, and overwhelmingly in excess of the number of corpuscles. It is mostly in the form of methemoglobin, as one of us pointed out years ago. Bile coloring matter is always present in excess. Bile acids are always present in mild cases and absent in severe cases. Albumin (serum albumin, albumose, globulin and nuclein) is always present, and considering the alkalinity of the blood and the albumin present in the urine, the acidity necessary to cover all this must be enormous. There is always a high degree of acidity, equivalent to from 80 to 160 per cent. $\frac{N}{10}$ KOH. The various tube casts, together with leucin and tyrosin, all of which are but an expression of overcrowding and enfeeblement of the liver and kidneys, are often present in the first stages of the disease, and are then of bad omen. In convalescence casts are always present together with more or less albuminuria, there is desquamative nephritis like that occurring in scarlet fever. This needs the same care and attention to diet and detail as in cases of post-scarlatinal nephritis. This is of great importance and should not be forgotten.

The vomited matter gives nothing special to consider. It is feebly acid, of a dark yellowish green color; often it comes on suddenly, but usually is preceded by nausea. It is forcibly ejected from the stomach, and consists of products similar to those found in the fecal matter, viz., bile-coloring matter and cleavage products resulting from imperfect metabolism in the liver. Articles of food are rejected in an unchanged state and mucus is present in excess. The stomach has become an eliminative organ.

The blood, of course, presents the most interesting features for

study. The number of red cells is always very much reduced. A reduction of 3,000,000 may take place in a single day. The hemoglobin always suffers, being reduced to as low as 30 per cent. within twenty-four hours. The percentage of this substance is always higher, however, than the pallor of the corpuscles, and the corpuscular count should indicate, on account of the hemoglobinemia, i. e., free hemoglobin in the plasma. The whole volume of the blood is much reduced.

White cells. Early in mild cases and in convalescence leukocytosis is the rule and augurs well for the patient. In the severe and fatal cases a hypoleukocytosis from the beginning, becoming more marked toward the end, has been the rule.

Phagocytosis. The greater the vitality and the resistance of the patient, the greater the evidence of phagocytosis, and *vice versa.* In mild cases and early in convalescence it is not uncommon to see two and three large phagocytes loaded with pigment rods in a single field.

The plasma of the blood contains free hemoglobin, pigment clumps, leukocytic fragments and debris, and is always increased in toxicity. The greater the symptoms of intoxication and the less the evidence of phagocytosis, the more toxic the blood serum.

When *plasmodia* are found, they are present only during the first stages of the disease. We have rarely seen them after the second day in blood from the peripheral circulation. The great corpuscular destruction and the toxemia present seems to be inimical to the further multiplication of these organisms. The tertian is found occasionally, the intra-cellular ring-shaped, and hyaline estivo-autumnal is usually present. In some cases convalescence is complicated by a re-infection. The absence of *fibrin* is conspicuous from the beginning, and is most marked in the severe cases.

Regenerative efforts marked by lymphocytosis, polymorphonuclear leukocytosis, eosinophilia, microcytes, and often nucleated red cells of all kinds, may be seen early in the disease in mild cases and always during convalescence.

We conclude therefore that—

1. The red cell necrosis is rapidly progressive.

2. When this necrosis reaches a standstill, morphotic changes take place, and a rapid regeneration results.

3. The hypoleukocytosis is subsequently replaced by a leukocytosis, the increase being chiefly of the polymorphonuclear variety and eosinophiles.

From this analysis of the feces, urine, vomit and blood we may now approach the discussion of the symptoms and the analysis of their significance. We will begin with the first of the triple symptom :

Hematuria. This varies in individual cases as to character. When the splanchnic paralysis is great (rigor with very high temperature), the half of it may be pure hemorrhage. The methemoglobinuria, which is the most important feature, is brought about as follows : Normally the waste hemoglobin set free in the spleen is split up in the liver, some of the coloring matter going off as bile pigment and some as urobilin. In this *disease* (we use the term advisedly) the waste hemoglobin is enormously in excess. The liver manufactures an incomplete bile, being largely toxic products, hydrobilirubin and mucus, and as the pressure in the ducts increases above the pressure in the lymphatics, resorption into the circulation takes place, resulting in intoxication and wholesale disintegration of the corpuscles to the extent of killing out the plasmodia and throwing out the additional *met*hemoglobin,whose exit is blocked both in the spleen and liver, directly upon the kidneys. This in itself has an injurious effect upon the kidneys, already more or less damaged by a chronic malarial cachexia, repeated chills and other causes, and promptly places the kidneys *hors du combat.* The glomeruli and tubules are distended with disintegrating blood caused by venous (backward) pressure, the labyrinthine circulation is stopped, and a desquamative and finally degenerative nephritis is the result. The hematuria, then, is the result of (*a*), the congestion incident to the chill ; (*b*), inability of the liver to get rid of its waste material ; (*c*), the absorption of the resulting decomposition products into the circulation with resulting blood disintegration.

Jaundice. The consideration of this symptom, based upon pathologic findings and physiologic deductions, lays bare much to be appreciated. As pointed out above, it is both hepatogenous and hematogenous, primarily the latter.

It is the function of the liver to use up the waste hemoglobin resulting from the continuous physiologic disintegration of the

corpuscles. In malarial infection this disintegration is increased. The more severe and continuous this infection becomes, the more marked the evidence of hepatic hyperactivity. This hepatic hyperactivity superimposed upon a chronic blood destruction, soon leads to nutritional changes—cloudy, then fatty degeneration must soon take place, and it does. In the case of a hematuric attack fatty degeneration becomes acute from six causes: 1, hyperemia and stasis; 2, impaired nutrition of the hepatic cells; 3, toxicity of the blood; 4, rapid disintegration of the red discs; 5, hyperactivity of the hepatic cells; 6, engorgement of the ducts with unformed biliary matter. This is the explanation for the term "bilious" applied to chronic malarial conditions. The microscopic sections explain this more fully.

Vomiting. This symptom is but an expression of toxemia. It is not merely a local disturbance. It is central in its origin and projectile in character. It is a condition which finds its analogue in the vomiting of pregnancy and of Bright's disease. The more severe the intoxication the more severe the vomiting, provided tissue reaction is not impaired.

The extreme nervous phenomena so often seen are also direct evidences of the amount of toxemia, or uremia, as it is incorrectly called. Edema of the brain and, as found in two of our autopsies, a pachy- and lepto-meningitis may be the cause of the nervousness. Violent delirium rather bespeaks the latter conditions.

Following are the histories of the eight cases seen at a distance as well as the four cases comprising the post-mortem series; together with a case in contrast to these which, pure and simple, was a case of *hemorrhagic malarial fever*, and was cured in a few days by the use of quinin.

Cases Seen at a Distance.

CASE I. P. A., female, 16 years of age; residence, *swamps of Arkansas*; *uses well water.* Taken sick March 14th with severe chill; never had any chills or fever before, and never had taken quinin so far as she knows; has always enjoyed good health. Following the first chill of the 14th, hematuria occurred in about two hours, when a large quantity of very dark brown urine was passed, and was followed by fever of 105° F., which was reduced by phenacetin. About twelve hours later had two nose bleeds. We saw her about forty-eight hours after the initial chill. She was a tall, well-formed, muscular girl, slightly jaundiced, and apparently not very sick; heart sounds normal but irregular in rhythm; lungs normal; spleen much enlarged, and is not painful to pressure; liver slightly enlarged, and is more sensitive than the spleen; the face is

calm, skin jaundiced, the scleræ markedly so; tongue is pale, moist, flabby and heavily coated with grayish slime; pulse 128 per minute, weak and intermittent (loses one beat in seven or eight); temperature 101⅕°. Kidneys secrete twenty ounces of urine per diem, deep amber in color, and with specific gravity of 1014 (?), reaction 60 per cent. acid; slight albuminuria; very few granular casts and epithelia, the latter being well preserved. Sediment contains very few red blood discs, which are much decolorized, and do not contain plasmodia; some pigment granules are also seen; no sugar; urea 4 per cent.

[NOTE.—There must be some error in the record of the specific gravity.]

Blood Examination. Well marked hemoglobinemia; hemoglobin 45 per cent.; red cells 2,150,000; stain poorly, and show many normoblasts; white cells not counted, but apparent increase of phagocytes, several of which were seen in almost every field containing pigment rods. Vomitus not examined. Feces show mild pepton reaction.

Treatment. Strychnin, nitro-glycerin and normal salt solution, hypodermatically; Basham's mixture and Fowler's solution; bland, nutritious fluid diet; recumbent posture, mild laxatives and plenty of boiled water. Result, recovery.

The features of this case are: First, no history of preceding malaria, the primary chill coming on her suddenly while out in the field; second, the absence of plasmodia; third, the presence of normoblasts; fourth, the profound anemia after so short an illness, and of so slight a grade (observations taken less than forty-eight hours from onset); fifth, the very weak heart's action in spite of active stimulation, and the apparently good condition of the patient in spite of it.

CASE II. J. A., aged 32, male; residence, Mississippi Delta; has lived in this region about four years; has had intermittent fever frequently, and one attack of hematuria; uses well water; ground subject to overflow; the flood brought him to the city; had been having "second-day chills" for several days; quinin did not relieve them "but made them worse, because they kept coming every day for the past two or three days." On April 3rd felt very much out of sorts, restless and irritable; had severe headache, which he attributed to quinin, and pain in the small of back. About 5 P. M. had two very severe rigors in quick succession, followed by fever of 105° F. and a large copious flow of black brown urine at 8:30 P. M. There had been little urine passed prior to this. Severe diarrhea, with tenesmus, and frequent retching, now followed, and was not improved by the calomel given. At 10:30 P. M. the face is anxious, eyes blood-shot, conjunctivæ yellow, skin slightly jaundiced, saliva stains bed linen dark brown, tongue coated dark brown in the center and dry, pulse full and bounding, spleen markedly enlarged, liver likewise and more painful to pressure than the spleen, heart hypertrophied and laboring, lungs admit air freely but sounds are very harsh, especially in upper parts, respirations 36, pulse 120 per minute.

Blood Examination. Hemoglobin 65 per cent.; red cells 3,325,000, and show a very few intra-cellular hyaline estivo-autumnal organisms; white cells not counted, but apparently diminished; no phagocytosis; hemoglobinemia marked.

At midnight drew off two ounces of urine, which was like the first passed. Both of these specimens were highly albuminous, contained hyaline and granular casts, renal epithelium and blood cells, which were free from plasmodia; specific gravity 1.032; reaction=160% $\frac{N}{10}$; urea 8 per cent.; no sugar; feces reveal no bile acids. Between midnight and 8 A. M. two examinations of stained and unstained blood spreads showed no plasmodia, and hypoleukocytosis.

April 4, 10 A. M. Hemoglobin 35 per cent.; red cells 1,250,000; No plasmodia; white cells extremely scarce; kidneys have not acted; catheter withdrew half ounce of urine, which is much clearer than first, but is highly albuminous and shows casts, pigment granules, renal and bladder epithelium, blood cells, etc.; temperature 103⅘°, pulse 112, respiration 30. From this time until April 6, at 5:30 P. M., when he died, there was a rapid decline in the corpuscular count to 800,000, and of the hemoglobin percentage to less than 20; no plasmodia found in these examinations; no urine passed voluntarily; from one to two drams was drawn off at intervals and found to be steadily clearing, but containing albumin, casts, etc. After April 4th the heart began to fail rapidly, and in spite of active stimulation, including hypodermolysis, kept on weakening. There was practically complete suppression of urine, with coma and alternating with delirium. Edema of the lungs and glottis was the immediate cause of death. We shall not again rehearse the therapy employed in these cases.

CASE III. G. M. C., male, timberman, aged 45; residence, Arkansas swamps; was born in that section; had an attack of malarial hematuria in 1894; uses pump water. On July 26, 1897, about 5 P. M., had light chill, followed by high fever and hematuria in about three hours; seen July 27th. There is nausea and vomiting; headache, with great fullness in head; restlessness, quickened and labored respiration (26 to 28 per minute), slight stupor; skin jaundiced, scleræ markedly so; face anxious, sordes about lips and teeth; tongue shows dark, thick coating in center, fading away at the edges where the papillæ show out bright red. There is great pain over kidneys, liver and spleen; both the latter are enlarged, the spleen markedly so; bowels are sluggish; kidneys are very active, secreting about fifty ounces in past twenty-four hours; temperature 103° F.; pulse 130, bounding but irregular in volume; urine practically the same as in case I; feces show faint pepton reaction (for bile acids).

Blood Examination. Hemoglobinemia most marked; plasmodia none; regenerative changes absent; red cells 1,284,000; marked hypoleukocytosis; total hemoglobin, including free hemoglobin in plasma, 35 per cent. From this day, July 27th, until the 30th, in spite of treatment suppression supervened, and he died comatose.

CASE IV. W. J., aged about 50, *pure negro*; residence, Mississippi Delta for about forty years; land subject to overflow; uses water from a well thirty feet deep; had been having slight intermittent chills for about nine days; quinin produces hemoglobinuria, so took "chill tonic." For three days prior to the appearance of hematuria, chills came daily and culminated in two chills on August 3rd, the second of which was "awful," was followed by high fever and "bloody urine." Symptoms practically the same as in other cases; temperature ranged from 103½° to 99⅘°; pulse 116 to 90; respirations from 30 to 17, between the first and fourth days; heart and lungs normal; urine passing moderately free, about 18 or 20 ounces in twenty-four hours; seven voidings examined, varying from almost black to clear; numbers 6 and 7 contain the usual casts, etc.; no blood cells found; all contain albumin, the later specimens more than the earlier. In number 7 there is a positive bile acid reaction, which is the first obtained in any of the cases. Specific gravity in the different specimens varies from 1.031 to 1.012; reaction acid; urea 0.02, 0.034, 0.029, 0.021, 0.010, 0.012, 0.015; feces are dark-green, acid, show indol and hydrobilirubin in abundance; mucus in great quantity; no blood discs; no reaction to pepton.

Blood Examination. Hemoglobinemia not so marked as in other cases; hemoglobin 45 per cent.; red cells 2,180,000; no plasmodia. Fourth day—Hemoglobinemia slight;

hemoglobin over 60 per cent.; red cells 3,356,000; phagocytes in abundance, loaded with pigment masses; regenerative changes marked, even to the extent of a few normoblasts.

Result. Died suddenly on the night of the fifth day from heart failure, the result of exertion; no autopsy obtainable. From a study of the heart sections of a case dying like the one just recorded, there is shown a marked nerve degeneration and empty cylinders, which goes far to explain the cause of death in such cases. There were three cases of sudden death in the entire series of twelve cases.

CASE V. F. S., female, aged 15½ years white; residence, Marion, Ark.; subject to overflow; has lived in locality ten years; has had malaria of the remittent type; has taken chill tonic but no quinin; there is no idiosyncrasy to quinin; uses well water (50 feet deep). This is the third attack of hematuria in seven years. On September 18th was taken with severe chill about 5:30 P. M., which was followed by high fever and a copious flow of dark brown urine (12 ounces); saw her September 19th. This case does not differ from any of the rest in symptomatology, with the exception that there were present marked nervous symptoms and almost incontrollable vomiting; temperature 105⅖; pulse 140, full and strong; tongue coated thick creamy-white; bowels moving freely; passed 12 ounces of urine in sixteen hours, the last passing about five hours ago, consisted of about 1 ounce, and was almost black; heart and lungs normal; spleen perceptibly enlarged and somewhat painful; liver markedly enlarged and quite painful.

Urinary Examinations show leucin and tyrosin in conjunction with the usual findings of albumin, casts, etc.

Blood Examinations show entire absence of plasmodia and regenerative changes; only one count was made, which shows about 800,000 red discs; white cells almost absent; hemoglobin less than 20 per cent. Death on fourth day from coma, following complete suppression of urine.

CASE VI. W. W, male, white, 13 years old; residence, Ripley, Tenn., 500 yards from Mississippi river; land subject to overflow; uses cistern water; has lived in locality two years; had chronic malaria for three months preceding hematuria, which was apparent six hours before he had a chill. With this exception the symptoms were practically as outlined in preceding cases, with the further exception that there were positively no brain symptoms, and the attack was mild in almost every particular. The temperature ranged between 104½° and 99½° F., the pulse between 115 and 125, and the respirations between 31 and 22, between the first and fourth days of the disease. After the first evidence of hemoglobinuria on September 30th, which consisted of a copious flow of dark brown urine, the flow became scant, and the act of micturition painful. After this it became plentiful again, when he passed about four pints per day, which showed up perfectly clear on the fourth day. On the first day it was intensely acid, chlorids diminished, urea increased, albumin in abundance, few casts, specific gravity 1.028. On the fourth day it was a medium amber color, specific gravity 1.014, acidity less marked, urea slightly increased, chlorids increased, albumin and casts in small proportions; feces react to pepton.

Blood Examination. First day—Hemoglobin 35 per cent.; no plasmodia; red cells 1,361,000; numerous phagocytes, loaded with pigment rods, are seen in almost every field. Fourth day—Marked regenerative changes present; normoblasts in plenty; blood flows freely at site of puncture, and is of good color; hemoglobin 65 per cent.; red cells 3,456,000; no plasmodia; recovery.

CASE VII. M. M., female, white, aged 13, born and raised in Mississippi Delta; land subject to overflow; use deep well water. This is the third attack of hematuria in four years. October 10th taken suddenly with severe chill, which was quickly repeated; fever rose immediately, and a large quantity of dark urine passed within an hour; saw her next day. Temperature 103⅕°; pulse 120, full and strong; respirations 24; vomits incessantly a dark greenish material, which discloses bile acids; heart and lungs normal; spleen enlarged and painful; liver much enlarged and quite painful.

Urinary Examination. Specific gravity 1.030; reaction 80 per cent. acid; chlorids diminished but not absent; albumin, casts, granular detritus and few blood discs.

Blood Examination. Hemoglobinemia; mild leukocytosis, showing phagocytes containing pigment masses but no plasmodia; regenerative changes apparent; hemoglobin 40 per cent.; red discs 2,050,000. Later we received by mail several blood spreads from the physician in charge which showed marked and progressive regenerative changes. Recovered.

CASE VIII. G. W., male, white, aged 30, timberman; residence, Arkansas; uses well water; has suffered with chronic malaria all his life. This is second attack of hematuria; was taken with hard chill on the night of October 20th, which was quickly followed by fever, hematuria and vomiting; saw him next day. Temperature 104⅗°; pulse 138, full and strong; respirations 30; heart hypertrophied to the left; lungs normal; spleen enormously enlarged and painful; liver enlarged and somewhat painful.

Urinary Examination shows the usual changes; the chlorids are diminished; no leucin or tyrosin present; specific gravity 1.028.

Blood Examination. Marked hemoglobinemia; mild leukocytosis; no plasmodia; red cells 1,824,000; hemoglobin 40 per cent.

This patient made, seemingly, a slow and tedious recovery, but finally died of suppression of urine about two and a half months after the urine had cleared.

Post-Mortem Series.

CASE I. Jas. Freeman, age 20 years, timberman; residence, Mississippi bottom. Admitted to the St. Joseph's Hospital July 15. Had had tertian fever for about two weeks, which became quotidian for several days before admission; had hematuria on the 10th, preceded by hard chill; when admitted was slightly delirious, passed bloody urine once, temperature steadily rose until he died on the 16th. No more urine passed, no plasmodia. Treatment consisted of quinin bisulph., 10 grains, t. i. d., hypodermatically; calomel in large doses every hour.

Autopsy. The body is jaundiced; there is no cutaneous infiltration; the peritoneal cavity is full of fluid; the organs are pale and have a washed-out appearance; all the serous cavities are filled with fluid, which is pale yellow; the liver is enlarged, the gall bladder enormously so, containing six ounces of dark green viscid bile; liver fatty and pigmented, though pale; spleen very large, dark, hyperemic; kidneys pale; capsule slightly adherent; no hyperemia in medulla; intestines contain greenish viscid matter, and are bile-stained; bladder empty; brain anemic, watery. Microscopic sections of liver show the capillaries filled with rod-shaped pigment masses enclosed in necrotic cells; there is very little pigmentation of the endothelia, and none of the hepatic cells, which are shrunken and necrotic or granular. The kidney sections show cell proliferation in, and swelling of, the glomeruli; the tubular epithelia are in a state of cloudy swelling and pigmented, especially in the convoluted tubules; the spleen is hemor-

rhagic; some endothelia are proliferating; there is round cell infiltration around the trabeculæ; no pigmentation and no cell degeneration.

We might here mention the case of D. L. T., residence Arkansas, timberman, aged 30, who was admitted to hospital on July 13th. He had had chills for several weeks before (don't know character); had chill on 9th, again on 10th, accompanied by bloody urine, *which was light red and highly albuminous, and contained corpuscles in abundance* (a true hemorrhage). On the 12th he again had a chill. After admission on 13th was given 10 grains of quinin bisulph. hypodermatically every six hours, calomel, three large doses (5 grains), every hour. Blood examination showed tertian organisms; no further chills; fever continued several days; recovery complete and uneventful.

Case II. J. W. A., Arkansas timberman, aged 30; had bloody urine in attacks of fever in 1888, 1890 and 1893. About August 10, 1897, began to have fever; took calomel and sweet spirits of nitre without effect. On September 1st urine became dark colored and he entered St. Joseph's Hospital, with some fever, severe jaundice, injected conjunctivæ, flabby tongue, which was slightly coated, and vomiting; bowels locked for two days; anorexia, stupor with tendency to comatose condition.

Examination. Abdomen distended partly with gas, but chiefly by enlarged spleen, which extended two inches to right of umbilicus and three inches below the ribs; liver was somewhat enlarged (about one inch); area of cardiac dullness normal; slight blowing murmur over apex beat, not transmitted. Lungs revealed harsh inspiration, with prolonged expiration at the right apex, otherwise normal; pulse weak, not very fast, volume poor; often had chills daily, but as a rule every other day. He knew, however, "that he was in for it, because the quinin had no effect." His fever was continuous for ten days prior to his admission to hospital. During the day and night of his admission he passed three pints of dark claret-colored urine, acid reaction, specific gravity 1.016, containing albumin, casts, and slight granular debris. The temperature at 11 A. M. registered 101° F., pulse 110, respirations 20. Plasmodia having been found by the regular visiting physician, 10 grains of quinin were given hypodermatically every three hours, with ⅛ grain of calomel per orem every hour for the relief of vomiting, which was effectual. At 2 o'clock P. M. the axillary temperature was 103°; at 5 temperature 102⅗°; at 8 temperature 101°; at 11 temperature 104°. 5 grains of phenacetin were now given, and repeated every three hours. At 2:20 A. M. temperature registered 100° F.

From this day until September 14th, when he died, there was a gradual reduction of red cells and hemoglobin, until the former dropped from 2,256,000 to 800,000, and the latter to about 15 per cent. The urine, which was examined on the 7th, was brownish yellow in color, normal degree of acidity; specific gravity 1.016; urea 8 per cent.; albumin 11 per cent. by volume, phantom cells; no bile constituents; many flat and round epithelia; many granular and blood casts; leucin and tyrosin in great abundance; feces dark green and viscid; reaction acid; faint pepton reaction, but strongly reacts for bile pigment; indol reaction faint; microscopic examination showed no blood discs; some epithelia; granular matter; dark pigment clumps; mercurous oxid.

Autopsy. Body not much jaundiced, scleræ markedly so; liver and spleen enormously enlarged; the latter measures 18 x 24 inches; liver very yellow and fatty looking, granular and pultaceous; spleen dark, pultaceous, interstitial overgrowth, capsule adherent, and of grayish color; kidneys pale, large, pyramids congested, capsule

adherent; venæ stellatæ almost undemonstrable, supra-renals black in medulla and hollow, medullary portion being necrotic; heart flabby, pale, no clots; there are two ounces yellow serum in pericardium; lungs free, hypostatic congestion, edema, fluid in pleuræ; brain very anemic, saturated with fluids, especially the cerebellum, which was like alabaster; ventricles full of clear fluid, puncta vasculosa almost absent; bladder empty; intestines bile-stained; peritoneum contains some fluid.

Microscopic Examination. Liver—Sections stained poorly though distinctly; advanced cloudy and granular degeneration of the hepatic cells; pronounced pigmentation of both hepatic cells and endothelia; pigment is in coarse grains, often rod-shaped; round-cell infiltration in and around the portal spaces; blood capillaries empty; protoplasm retracted; other vessels only partly filled; no plasmodia; some bile capillaries within the lobules are distended with dark green bile. The Spleen shows great hyperplasia, almost entirely lymphoid tissue; very few endothelial spaces — that is, proper functionating portion of organ—left; almost no hemoglobin tissue; great pigmentation. Kidney—Marked evidence of chronic diffuse nephritis, without exudation (interstitial); tubules not much dilated; Henle's loops choked with coagulated blood debris; convoluted tubules cloudy or necrotic and pigmented; hyaline degeneration of new connective tissue.

CASE III. A. B., age 33, boatman; admitted to St. Joseph's Hospital September 17th. Wife says he has been treated for Bright's disease for two years; two days ago had chill and fever, which were repeated next day; bowels had been constipated, now loose from purgative; tongue irregularly coated; considerable jaundice; spleen enlarged; liver, heart and lungs normal; lumbar pain; very restless; stomach rejects everything; urine dark brownish red, albuminous; specific gravity 1.015; acid reaction; no sugar; considerable granular debris. No quinin exhibited; other treatment to meet indications. Patient died suddenly September 19th, two days after admission, apparently from heart failure.

Autopsy. Body warm four hours after death; fairly well nourished; skin deeply jaundiced, scleræ markedly so; slight purpura about chest and arms; very slight desquamation about thorax; fairly good layer of adipose tissue; muscle fibers pale; intestines waxy, but vessels prominent; spleen weighs about two and a half pounds, is very soft, pulpy, and a veritable pus sac; liver enlarged, fatty and somewhat sclerosed; kidneys about normal size, right largest, mahogany color; capsule adherent; lungs very pale, otherwise normal; pericardium contains about six ounces of sanguineous fluid; muscular fibers of heart pale, almost fatty; brain extremely pale; membranes filled with considerable fluid; ventricles distended; puncta vasculosa scarcely recognizable; splenic blood shows absence of regenerative changes; absence of plasmodia; cover-glass preparation shows red cells with only a hemoglobin ring, the center being absolutely colorless; white cells in abundance, which show extreme granular change. (Blood examination on morning of admission shows red cells 800,000; intra-cellular organisms, hyaline and non-pigmented; numerous phagocytes, containing organisms, one having three in it; hemoglobin 20 per cent.; evening examination, no plasmodia.)

Microscopic Appearance. Liver—Sections stain fairly well, though there is some cloudy swelling and granular degeneration of the hepatic cells near the central vein; pigmentation is marked in the central portion of the lobule, including both hepatic cells and endothelia; the pigment is in coarse grains, mostly rod-shaped; the capillaries are empty; some of the portal and hepatic veins contain blood in which there are no

plasmodia; there is no proliferation; the connective tissue is rather hyaline. Spleen—This shows marked degenerative changes; the trabeculæ are hyaline, the endothelia and proper cells are pigmented and somewhat altered; there is small round-cell infiltration near the trabeculæ; the malpighian bodies show marked sago spleen; the lymphoid tissue shows only at periphery; the endothelial spaces contain coarse pigment granules; no pigmented bodies are in the red and white cells, and free hemoglobin is markedly diminished; the few polymorphonuclear cells are fragmented. Kidneys—The glomeruli and all the tubules are dilated; there is slight latent chronic "interstitial" change; the epithelia, mostly of the convoluted tubules, are pigmented, the latter are in all stages of degeneration from albuminous to granular; the lumina are filled with hyaline debris, in which phantom cells can be made out; the loops of Henle are mostly blocked with blood debris; the vasa recta dilated and full of blood. Heart—Fibers stain well and show striations perfectly; there are some areas of slight pigmentation and some of connective tissue proliferation; *the nerve trunks in transverse section show marked degeneration; empty nerve sheaths are seen and some connective tissue proliferation into funiculus.* Brain—Nothing abnormal is seen, except slight remains of lepto meningitis; pigment grains and pigmented cells are seen in the capillary spaces; the vessels are almost entirely empty; no plasmodia.

Case IV. G. W. B., age 34, laborer; admitted to hospital November 18th; from Ohio eighteen months ago; worked in Arkansas as timberman, and later along the Mississippi river. Had chills at irregular intervals since last spring, taking chill tonic nearly all the time; had a severe attack with bloody urine in September last, but was at work again in a few days. Last attack began five days prior to admission; took calomel, sweet spirits of nitre, and increased doses of chill tonic. A chill followed each day, however, increasing in severity until the fifth day, when the urine became bloody. At once came to the hospital, after which he passed about twelve ounces of bloody urine; was delirious at midnight, and remained so for about forty-eight hours; almost complete suppression of urine; pulse dicrotic and weak, but responds slightly to active stimulation, but finally became intermittent. He died at noon of Nov. 26th.

Physical Examination. Heart and lungs normal, except slight friction sound over right lung; spleen enlarged and tender, liver slightly so; kidney very tender; temperature on admission was $104\frac{3}{5}°$, but gradually subsided, becoming subnormal on 22nd and 23rd; it then rose to normal, but dropped to $97\frac{3}{5}°$ on Nov. 26th. Blood count on Nov. 21st, 1,100,000 red cells; hemoglobin estimation could not be made; no plasmodia. Blood count Nov. 24th, 1,546,000 red cells; hemoglobin 15 per cent.; mild leukocytosis. Died at side of bed in an effort to get up.

Post-Mortem Fourteen Hours After Death — Appearance. No jaundice; extreme rigor mortis; body very muscular; panniculus very thin; peritoneum contained about 500 c.c. straw-colored fluid; upper portion of ileum showed several hyperemic areas; Peyer's patches somewhat raised; a few bile-stained areas where the wall was distinctly thinner; focal necroses; intestine contained dark green fluid feces; the spleen was enlarged, its pulp normal in color, but pultaceous in consistence; the liver was enlarged, rather yellowish, with some cloudy swelling, and perhaps some fatty degeneration; the left kidney was enlarged and showed venous hyperemia, otherwise of good color and consistence; right kidney normal size, and had same appearance as the left; the gall bladder was distended by dark green fluid, but small; there were no other lesions in abdominal cavity. The pericardium contained an ounce of yellowish fluid; the heart

was pale; both cavities were empty; no clots or thrombi; no inflammatory change; the mitral and tricuspid valves showed some marginal thickening; the lungs were in a state of hypostatic congestion and edema; the left pleura was obliterated from old adhesions; the brain was firm, somewhat pale; slight effusion under tentorium; pachymeningitis; adhesions marked; some adhesions between the hemispheres, showing remains of slight lepto-meningitis; ventricles contained some straw-colored fluid; no thrombi; no degeneration.

There was every evidence in this case of regeneration. The abdominal organs bled on section, which is in marked contrast to the other cases. The muscles were of good color, and the bone marrow looked excellent. The specimens from the different tissues were accidentally lost, and hence we cannot give microscopical report. We are satisfied that the exertion of sitting up killed this man, and that the heart would have shown degenerated filaments.

EXCISION OF THE SACRO-ILIAC JOINT, WITH REPORT OF TWO CASES.*

BY J. J. BUCHANAN, M.D.
Surgeon to Mercy Hospital, Pittsburg, Pa.

Disease of the sacro-iliac joint is considered by authors a rare affection; but there is no reasonable doubt that many cases occur in which the diagnosis is never made—the patients either recovering spontaneously or dying from infection of an opened so-called tubercular abscess or from tuberculosis elsewhere. Sacro-iliac disease is usually tubercular, and comparatively, sometimes extremely, slow in its progress.

Complete excision of this joint has been very infrequently performed, perhaps owing to the prevalent opinion that the joint is accessible with difficulty and the operation likely to be unsatisfactory. It is the purpose of this paper to show that this joint is easy of access, and its excision in proper cases an extremely satisfactory procedure.

Sacro-iliac tuberculosis occurs most frequently in young adult life and, like tuberculosis of other joints, may or may not be attended by the formation of the tubercular abscess. Weller Van Hook, of Chicago, in his masterly article in the *Annals of Surgery*, 1888 and 1889, has shown that 94 per cent. of the "dry" cases recover, while without operation but 8 per cent. of the abscess cases are saved.

The early symptoms of the disease are slight stiffness about the

* Reported to Allegheny County (Pa.) Medical Society, August, 1898.

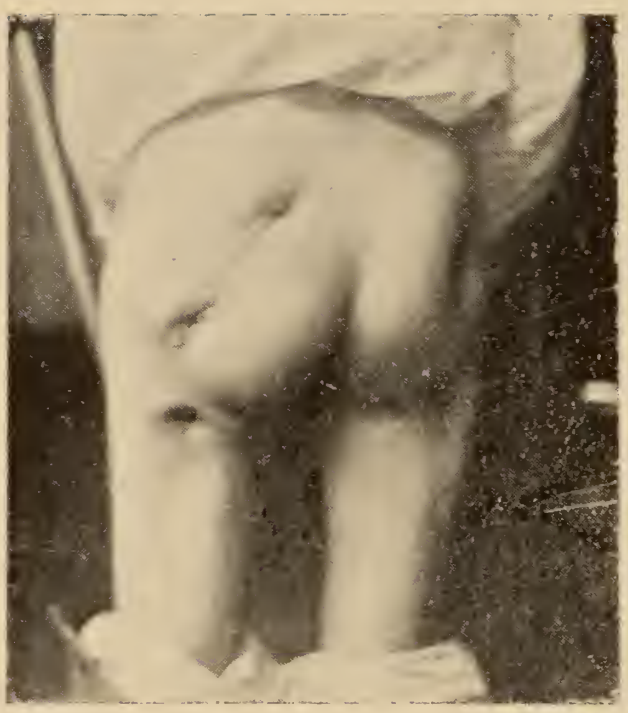
gluteal region, some discomfort in standing, tenderness over the joint, and pain over the articulation or extending down the thigh. The later symptoms are increased severity of pain, which radiates along the sciatic, anterior crural, obturator or genito-crural nerve, a limping gait, and especially pain when the ilia are crowded together by pressure approximating the anterior superior spinous processes.

When a tubercular abscess forms, it may make its way in front of or behind the articulation and appear at Poupart's ligament, at the upper part of the thigh, at the sciatic notch, behind the great trochanter, in the ischio-rectal fossa, in the lumbar region, in the gluteal region, or over the joint itself.

Treatment of the disease, before the formation of abscess, consists in rest of the joint, especially to be gained by a supporting belt around the pelvis, and general tonics. After the formation of abscess, complete eradication of all tubercular tissue, and particularly excision of the diseased joint, under strict asepsis, and packing and drainage of all accessory cavities, appears to be the most rational and hopeful plan.

CASE I. Mrs. B. M., aged 24, married, mother of one child 3½ years old, admitted to Mercy Hospital January 27, 1898. Had been sick two years. Three months before the present illness, had had typhoid fever. Pain in the right gluteal region had been the first symptom, for which she had been treated for six months without relief by weight and pulley for a supposed hip joint disease. There had next appeared an enlargement in the same region, which had been incised in two places. When admitted to the hospital her condition was as follows: Patient emaciated, anemic, bedridden; two sinuses in the right gluteal region, one at the right wrist joint, and one at the left ankle; marked tenderness along the right border of the sacrum and over the inner part of the ilium; no shortening of the limb; free movement at the hip joint; no tenderness over hip joint; rotation of limb free; marked pain on the slightest crowding together of the ilia. Operation January 30 by the method described below, the sinuses at the wrist and ankle curetted at the same time. Disease at ankle progressed so as to require amputation on March 9th. On March 21st she was able to sit up. Granulation and cicatrization were proceeding satisfactorily at the site of the sacro-iliac operation; her stump had healed by primary union, and she returned to her home on March 21st. About August 1st she died, probably of pulmonary tuberculosis, the signs of which had begun to appear before she left the hospital.

CASE II. Samuel W., aged about 23 years, was seen for the first time November 10, 1897, in consultation with his physician, Dr. F. S. Pershing, of Wilkinsburg. He complained of intractable sciatica on the left side, and presented also a weeping sinus communicating with the first and second metatarsal bones of the left foot. He was extremely emaciated and anemic, and worn with constant suffering. About one year before he began to have pain in the "small of his back," which later extended down

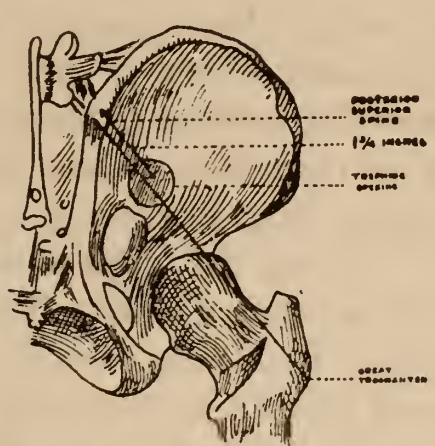


Dr. Buchanan's Case of Sacro-Iliac Disease After Operation.

the posterior aspect of his left thigh. Caries of the metatarsal bones subsequently developed, and the tuberculous abscesses had been opened some months before. At this time, November 5th, a careful search was made with Dr. Pershing for the cause of his sciatica, but without avail. Two days later the diseased tissues in his foot were removed, under chloroform. On January 1st a fluctuating swelling appeared in front of and above the great trochanter. This made its way posteriorly under the gluteus maximus muscle, and presented behind the great trochanter. By close scrutiny, there was to be found a small, deeply fluctuating, slight elevation over the sacro-iliac joint. There was some tenderness over this joint, and slight pain when the ilia were crowded together. Coxalgia was excluded by the free mobility of the hip joint, range of motion being normal. Examination of the spine for lumbar Pott's disease was negative. A diagnosis of sacro-iliac disease was based on the tenderness over that joint, pain in crowding the ilia together, sciatica, due to pressure on the sacral plexus before the fluid had escaped through the sacro-sciatic foramen, location of the tuberculous abscesses, and exclusion of lower lumbar and hip joint disease. Excision of the sacro-iliac joint was performed on February 1st, by the method below outlined. The accessory cavities were evacuated, curetted and packed. No reaction followed. The packing was removed in about three weeks and, under the treatment of Dr. Pershing, the cavities and joint site entirely cicatrized. He still uses crutches, but is rapidly gaining in flesh and strength and in the use of his limb.

Technique of operation:

1. Locate the joint as follows: (a) With the thigh fully extended, draw a line from the posterior superior spinous process of the ilium to the prominence of the great trochanter. (b) Fix a point one-fourth of the distance along this line (in the adult about $1\frac{1}{2}$ or $1\frac{3}{4}$ inches) from the spinous process. (c) Pass a drill at this point through the soft parts into the bone.



Illustrating the technique of excision of the sacro-iliac joint.

2. Make a free incision to the muscle along the line marked, with its center at the drill hole. This incision corresponds with the general direction of the glutei muscles, whose fibers may be separated to the bone without cutting.

3. Having cleared the bone of muscular fibers for a sufficient space around the drill hole, perforate the bone with a trephine of 1 or 1¼ inch diameter, with its center at the drill hole.

4. With the rongeur forceps remove enough more of the ilium to fully expose the diseased joint, the sacral portion of which can be cleared with the curette and gouge.

5. Lay open all tubercular abscess cavities as fully as the anatomical conditions will permit, and curette and pack them with iodoform gauze.

6. Leave no dead spaces.

7. Suture the soft parts accurately, except at points of exit for the gauze.

8. Observe strict asepsis throughout.

CASES ILLUSTRATING THE DIFFICULTY OF LAYING DOWN HARD AND FAST RULES IN TREATMENT.*

BY WILLIAM PEPPER, M.D.
PHILADELPHIA.

I. *The Treatment of Urgent Symptoms.*

The more we study medicine the more difficult it seems to be to draw hard and fast lines in the treatment of disease. Aspects of disease are disarranged, and science is subject to constant change from the earliest days to the present moment, when countless observers are confirming or disputing classic investigations. In no disease is this more marked than in the collection of symptoms we call "Bright's disease." From the days when Bright first called attention to the relation between dropsy, albumin in the urine and kidney disease, there has been constant change. This disease which, up to that time, had been known as "dropsy," was not discovered by Bright; the value of his work rests in the fact that he developed their relationship beyond the shadow of a doubt. But now, the disease, or rather the group of diseases, has been investigated far beyond the thought of Bright, so that it seems to me that in the course of time the name of Bright, as applied to these diseases,

* Reported medical clinic of the late Professor Pepper.

must disappear, or else our conception of its significance be widened, so that its value as a clinical picture will not be destroyed.

The practical point which I wish to bring out of this discussion is, that in treating cases of so-called Bright's disease, it is not wise to allow the kidney trouble to blind your eyes to the fact that there may be more urgent symptoms in these cases which require more attention than the classical features themselves.

After all, the end and object of medicine is the employment of successful treatment. When called to see a case in which there are a number of urgent factors, it is impossible to do everything at once. Personally, I am opposed to the so-called "shotgun" system of prescribing; in my hands it has proved of little value. Permit me to illustrate how I would manage an urgent case which seems to require that several things should be done at once. The following case happily illustrates my ideas:

We have here a Russian Jewess, who was admitted to the hospital with the history of having been ill for ten days. She had been discharged from the hospital a month before, having been under treatment for some bronchial trouble. About a week before she came back she developed a cough; her temperature rose to 104 degrees, and her stomach became so irritable that it was impossible for her to keep anything on it. On admission, a complete and careful physical examination gave negative results. In these cases, where the examination is largely negative, the routine plan of studying the entire system gives a sense of infinite comfort. It is an excellent plan in the study of every case, after considering all the points of which the patient complains, or which you can detect, to complete the investigation by a routine study of the entire system. For example, taking the patient's head, ask one's self, has he any brain trouble, or ear or eye trouble? in this way covering the whole body. In this case, with the exception that the breath-sounds in the left lower lobe of the lung are feeble on ausculation, there is apparently nothing wrong with the woman, excepting the fact that the urine is lemon-colored, of low specific gravity, and contains albumin and hyaline casts. On admission, her temperature was 104°; it fell on the third day to 100°, since which time it has been normal or sub-normal.

Now, the urgent symptom in this case has been the existence of the persistent vomiting. If the patient could live without food, it would not be so difficult to control the vomiting, but as this is impossible, the indication is to supply her with the most easily digested nourishment in small quantities. In my experience, this task has been easier than it seems at first thought. I have tried all sorts of combinations of food, and intervals in time of feeding, and have come to the following conclusions:

I believe the proper interval of feeding in such cases is every two hours; one hour or one hour and a half is too short a time,

while three hours is too long. The mixture with which I have had the greatest success consists of two ounces of milk with one-half ounce of limewater and a dram of whiskey. This food I give every two hours, whether the patient retains it or not. In this way I get the greatest amount of rest for the stomach possible with the least amount of effort. You know that the heart, which is really the most active organ in the body, is actually longer at rest than it is at work, and certainly the stomach deserves all the respect we can give it. A quarter of an hour following this food, I give some such mixture as a fractional dose of morphia with a few drops of dilute sulphuric acid, administered in a small amount of curacoa. What has been the result of this treatment in this case? Under this form of treatment, aimed solely at her urgent condition, we find that she has greatly improved, so that the vomiting has disappeared, and now, on the tenth day since her admission, there are no albumin or casts in her urine, although we have not as yet directed any special treatment in that direction.

We will not bother ourselves about the relationship between the congestion in the kidneys, the vomiting, and the possible pneumonic patch in the lung, for theories, I believe, are largely useless, or even misleading. Some authorities might state that this was a case of nephritis with uremic vomiting and hypostatic pneumonia; with such let us have no quarrel, but rather let us reserve our energies to treat the various conditions as we find them.

II. *The Difficulty of Diagnosing Hepatic Colic.*

The following case, which is that of a young girl, presents a rather negative case of a kind that frequently occurs in private practice; it is an incomplete picture of some well-known condition, but so imperfect that it scarcely satisfies our judgment. In such cases, I think that practitioners frequently make the mistake of attempting to diagnose along preconceived theories, although this case does not point a moral in that direction especially:

This girl was admitted to the hospital a week ago with the history that she had inflammation of the stomach two years ago, and that her digestive functions have been in an unsatisfactory condition for a year. Six weeks ago she developed, suddenly, a sharp pain in the right hypochondriac region; four days before admission to the hospital she had a similar attack. She was constipated, suffered from headache, and her temperature ranged from slightly sub-normal to a slight degree of feverishness. There was no history or appearance of jaundice. In passing, it is well to remember that the eyeball is the first to show the existence of this condition, and the first place from

which it disappears. The characteristic color is more apt to linger on the trunk. In her urine there were triple phosphates, with a faint trace of albumin. There is no evidence of enlargement of the liver, but this is negative, for a moderate degree of enlargement of this organ could exist without detection.

We have searched for the passage of gall-stones, but were unable to find anything definite. A great mistake is frequently made in searching for gall-stones in forgetting the fact that they are not pieces of flint or granite but, on the contrary, easily and quickly disintegrate in the manipulation of the feces.

As to treatment. We are told by therapeutists that chloroform dissolves gall-stones; they have not yet pointed out a way by which the drug can reach the stone intact, so that our treatment is largely expectant. As the soda salts are believed to prevent the concentration of bile and the formation of stones, we will give the phosphate and sulphate of soda with calomel, and morphia for the paroxysms, restricting the patient to a light diet.

III. *Losing Interest in Chronic Cases.*

I will now introduce to your notice two interesting and instructive cases which will serve to show an unfortunate train of reasoning and course of treatment, followed by many practitioners. Never lose interest in your chronic cases. In meeting such cases in practice, divest your minds of the poison of considering what usually happens in these cases. The study of these cases will illustrate my meaning.

The first case is that of a young woman, 29 years old, in whom there is nothing remarkable, either in her family history or her own. She reports that she has had pleurisy and scarlet fever; her menses are irregular and scanty; five years ago she had a heavy chill, which was followed by a persistent cough, together with blood-streaked expectoration. At the same time she suffered considerably from nausea and vomiting; the vomit, she states, contained blood. The symptoms finally subsided, and she remained in a fair state of health until six months ago, when the cough returned; she lost weight and strength, and on admission to the hospital her temperature was 102°. Since then, for the past two months, she has had occasional attacks of fever, but the temperature had a tendency to remain sub-normal as a rule. As we glance at the chart, we find that there is no definite course to the fever. A temperature chart, taken in connection with other symptoms, may tell much or little, but alone, it generally tells but little.

We find at the apex of the left lung, absence of the natural breath-sounds, and the usual signs of phthisis pulmonalis. In passing, let me call your attention to a singular fact, that if the crackling rales heard especially at the apex of the lung are increased

by coughing, it is a fair evidence of phthisis; while, on the other hand, in pneumonia, coughing generally clears away the crackles. The rest of the lung tissue in this case seems to be in a fair condition.

Now, before concluding with this case, let us take up a companion picture, which is that of a woman 40 years of age, who shows that curious dark-bronzed color which we associate with Addison's disease, and of which, curiously enough, we have learned but little since the days of Addison, early in this century. The patient, at present, has a cough and expectoration, and is extremely depressed. The examination of the chest shows consolidation at the apex of the left lung. This woman, too, has phthisis.

Now, in such cases as these, I wish to impress upon your mind that you should not lose interest, and do not be led into giving too gloomy a prognosis. In the younger woman we have the history of the disease having existed for five years without especial loss of ground on the part of the patient. In cases where there is no definite progress of the disease, and the clinical history shows that there has been no especial deterioration, the case may run on for years. The patient may live ten, twenty, thirty years without any exceptional care, treatment or change of climate. These factors, which we frequently consider so all-important, may be lacking, and yet the patient lives along. The important feature of these cases is to measure, if possible, the rate of progress of the disease. These cases are getting along quietly and nicely with tonic supportive remedies. We will watch them closely and give them the fullest measure of our advice and attention.

THE USE OF CATGUT SUTURES IN VENTRO-FIXATION OF THE UTERUS.*

BY J. E. JANVRIN, M.D.
NEW YORK.
Gynecologist to the New York Skin and Cancer Hospital.

As the title of this paper implies, my remarks will be strictly confined to the use of catgut in the fixation of the uterus to the abdominal wall in cases of hysterorrhaphy, that fixation being of a tentative character, and intended to take the place of silk or any other non-absorbable material; and since it brings before us only

* Read before the fifteenth annual meeting of the New York State Medical Association at New York City October 19, 1898.

one point in the treatment of cases of ventro-fixation, the paper will necessarily be very short.

I have tried pretty thoroughly the different methods which have been recommended in cases of ventro-fixation or ventro-version, whether the displacement was a simple affair or complicated by adhesions or uterine prolapse; and in these operations I include, first, Alexander's; second, shortening of the round ligaments intra-peritoneally *without* fixation of the fundus to the abdominal wall; third, shortening of the round ligaments intra-peritoneally *with* fixation of the fundus to the abdominal wall by silk or catgut; fourth, simple fixation or suspension of the fundus by silk or catgut without shortening of the round ligaments; fifth and last, utero-vaginal fixation. In all cases in which adhesions were diagnosed before the operation, of course the Alexander operation was excluded and some other method was selected, and in these cases, during the progress of the operation, the adhesions were thoroughly separated, and the uterus and adnexa fully liberated from their pathological attachments.

From the results obtained, I have come to the conclusion that in nearly every case the use of catgut for temporary suspension, associated with curettage of the endometrium, when needed, and the repair of a lacerated cervix and perineum when such lacerations exist, and the introduction of a properly adjusted retroversion pessary *before* the perineal sutures are twisted, and worn for several months, will accomplish all that can be done by any or all of the other methods. My usual method of procedure is as follows:

The patient having been properly prepared, and all antiseptic precautions having been taken, so that she is ready not only for the celiotomy, but also for any plastic work within the vagina, I proceed first, to curette the endometrium, when the case demands it, and, after the curettage, having washed out the uterine cavity as cleanly as possible with a sublimate solution (1–5000) and made it as dry as possible by wiping it out with sterilized cotton, I then apply pure carbolic acid to the intra-uterine wall. If the cervix has been previously lacerated, trachelorrhaphy is done at once, silver wire being used for the sutures. The abdominal cavity is then opened by an incision of two and a half to three inches, and any adhesions of the uterus or adnexa to the surrounding tissues are broken up without much difficulty by the index and middle fingers

of one hand. Should the adhesions, however, be of such an extent as to require more space, the abdominal incision is extended as far as may be necessary to give the required room. It is rare that it becomes necessary to apply any ligatures to bleeding vessels. Should any be needed, I use a No. 2 or 3 catgut. Ordinarily, the oozing is slight, and a sterilized gauze pad pushed into the cul-de-sac behind the uterus and left there until the abdominal incision is about to be closed, takes care of whatever oozing has occurred. The ovaries and tubes are of course carefully examined, and should there be found any pathological condition requiring interference, the proper step is taken, exsection, resection, or whatever it may be. The uterus is then brought well forward, a No. 7 catgut, sterilized or cromicised (and I generally use the latter), is passed through its anterior wall, penetrating an eighth of an inch under the peritoneum, and including three-fourths of an inch of uterine tissue from side to side. This suture is usually placed three-fourths of an inch below the topmost point of the fundus, each end of the suture having been threaded in a slightly curved needle prior to its introduction into the uterine wall. The needles are now passed through the abdominal peritoneum about half an inch from the cut edge, one on either side, and then through the muscle and fascia, and brought out just above the fascia and at a point just above the lower end of the abdominal incision.

Silver sutures for closing the abdominal wound are then introduced. The gauze pad which had been placed behind the uterus is removed; the catgut suture drawn tightly and tied, the knot taking its place just outside of the fascia, and the uterus is thus brought up closely against the abdominal wall. The silver sutures are then twisted and the abdomen is closed and the proper dressings applied.

If there has been a preceding laceration of the perineum, perineorraphy is now done, a properly adjusted retroversion pessary being applied as soon as the silver sutures are all introduced, and *before* they are tightened. This pessary must be of such a size as to be borne without its pressing upon the perineal sutures.

The sutures are of silver and introduced upon one side of the pared surface of the vagina, just taking in the edge of the mucous membrane and coming out similarly upon the other side, thus not penetrating the skin at any point. The twisted ends of these su-

tures are brought out of the vagina and covered with iodoform gauze, so as to prevent their cutting or irritating the restored perineum, and a small piece of iodoform gauze is inserted between the vulva, a self-retaining catheter having been introduced into the bladder. The parts are kept clean by simply irrigating the vulva morning and night with sterilized water, beginning on the third or fourth day after the operation.

No vaginal douche is needed until about the tenth day, and that only after the perineal (or rather vaginal) sutures have been removed. The vaginal douche is then used every second or third day for three weeks, when the perineum has become strong enough to bear the introduction of the bivalve speculum, and the sutures are readily removed from the cervix. This can be done without removing the pessary, the patient being placed in the lithotomy position. The pessary is usually worn for a period of four or six months.

During the past four years I have operated upon some dozen cases in this manner, and the results have been almost uniformly perfectly successful. The object in view is the restoration of the uterus and the avoidance of the silk suspension suture, thus running no risk of subsequent intestinal strangulation. By the time the patient is allowed to be up the catgut has done its work and is nearly absorbed, and the slight temporary adhesion of the uterus to the abdominal wall is undoubtedly absorbed during the two or three months following the operation. Thus the uterus, now restored to its normal size and weight, is kept up by the pessary—should there be any tendency to retroversion—for the following three or four months; and by that time the ligaments, having regained their tone and assisted by the restored perineum, have sufficient strength to keep the uterus in its normal position permanently.

Exactly how much the catgut sutures accomplish, it is of course difficult to say with absolute precision, but I feel confident that they hold the uterus against the abdominal parietes for at least three or four weeks—probably much longer when the cromicised suture is used—and that the slight adhesion resulting from its irritation throws out just enough plastic exudation to insure for a few weeks longer a slight attachment of the uterus to the parietes. This is so slight that it must be necessarily absorbed in a short time, probably within a few months, four or five at most.

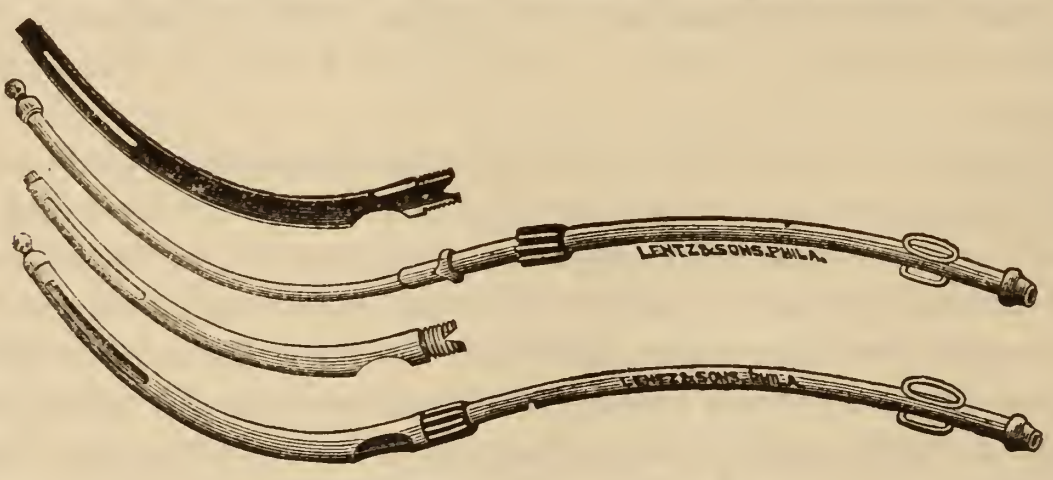
The catgut has thus done its work. The uterus has returned to its normal size, and when the pessary is removed, the ligaments, having regained their tone, readily hold the uterus where it belongs. I have examined several cases operated upon in this way, and have found a perfect result after periods varying from six months to two years.

191 Madison Ave.

CASE OF CHRONIC FÆCAL OBSTRUCTION RELIEVED BY MEANS OF IRRIGATION THROUGH THE KELLY TWO-WAY CATHETER.

BY HUNTER ROBB, M.D.
CLEVELAND, OHIO.
Prof. of Gynecology, Western Reserve University, and Gynecologist to Lakeside Hospital.

Mr. A., aged 75, a farmer of Warrensville, Ohio, was referred to me by Dr. La Dow in April, 1898, with the statement that since November, 1897, he had not had a really normal bowel movement, only passing a few pieces of fæcal material every other day or so. At the time of my visit I found a fairly well nourished man, complaining of abdominal pain with marked distention. There was no ascites, and no evidences of peritonitis were present. On examination of the rectum, I found it for the most part empty, with the exception of a few shreds of fæcal material. At the upper portion, however, a hard mass, giving a sensation to the touch not unlike that of a malignant growth, seemed to protrude from above into the rectum. To the right of the rectum, in the pelvis, a dense mass, as large as a closed fist, could be made out; this was very sensitive on palpation. The question presented itself, whether we had to do with a simple fæcal impaction, or one which had occurred as a result of a malignant condition. I inclined to the belief that there was, in all probability, a malignant growth present. I recommended a further trial with rectal bougies, and high enemata of soap and water and oil, while by the mouth small doses of calomel frequently repeated were ordered. Dr. La Dow carried out this treatment three weeks without avail. The



Two-way Catheter (Kelly).

patient was then admitted to Lakeside Hospital, April 14th. I made another examination and found the condition about the same as that already described, except that it was even more pronounced. I then determined to try irrigation of the rectum and the sigmoid flexure of the colon by means of the Kelly "two-way" catheter. After introducing the first two fingers of the left hand into the rectum, I was able to push the point of the catheter above the constricted area in the upper portion of the rectum, but beyond this point it met at once with a decided sense of resistance. I then allowed several liters of soap and water, followed by four ounces of olive oil, to pass through the catheter, but was only able to wash away the few flakes of fæcal matter that were collected in the rectal pouch. After using two liters of the soap and water, the fluid that returned through the catheter began to be slightly stained, but no bits of fæcal matter came away. This method of treatment was carried out every other day on three different occasions. On the third occasion small pieces of fæcal matter began to come away, and two cherry stones were also passed. This same evening he passed fourteen more cherry stones, and from that time he had eight large semi-solid stools in the next twelve hours. The intestines at once began to diminish in size, and the general condition to improve. The day before the bowels moved he had shown undoubted symptoms of auto-intoxication. The abdomen was much distended, and he complained of pain, to relieve which it was necessary to administer morphine hypodermatically. The patient had no further trouble with his bowels after the evacuations, and his general condition has also been satisfactory. The mass which projected into the rectum at its upper part could now be felt, but it was not nearly so marked as before the bowels were moved.

This case certainly shows that in instances in which we fail to relieve obstruction by giving enemata through the hard rubber rectal tube after repeated trials, one could employ the metal "two-way" catheter, which has the pelvic curve and which can be passed beyond the point of obstruction with the finger in the rectum as a guide. With this instrument I believe that in a certain number of cases we can relieve the obstruction and thus do away with the necessity of instituting operative measures. In our case I think that the obstruction was in all probability due to the accumulation of the cherry stones in the sigmoid flexure, and that by the irrigation through the two-way catheter we gradually produced a cone-shaped hole in the fæcal mass by washing away the cherry stones. The mass then collapsed and the intestines were able to contract and expel the fæcal contents.

1342 Euclid Ave.

THE

MEMPHIS LANCET.

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EDITORIALS.

CRIMINAL ABORTION.

In the LANCET of last month we called attention to the frequency of the advertisements of abortionists in otherwise reputable newspapers. Since that time it is pleasing to announce the conviction and sentence to imprisonment of a well-known abortionist in this community. In view of the obstacles to conviction and the difficulties of proof that usually surround all such cases, the attorney-general for his vigorous prosecution, and all others who were instrumental in the result, richly deserve the thanks of the community. It is known only to physicians how frequent the crime of feticide is committed and that it is largely on the increase. Statistics can never be obtained to show the frequency of the crime because the deed is done under the cover of secrecy by all concerned. It is a common occurrence, however, for physicians to be called to treat women who have recently been the subjects of criminal abortion, and knowing the inviolability of a doctor's confidences, the patient will frequently make a full confession of the whole matter. The woman does not desire to testify in the case, shrinks from the disgrace and notoriety incident thereto; the abortionist is careful that no one else is present, sees that the keyhole of his consultation room is closed, and hence very few cases ever come to judicial trial or are known to the public. It is a crime, too, that is not confined to the wayward or deceived girl, but on the other hand all physi-

cians know that married women very frequently have the operation practiced upon them. The married woman's excuse for the deed is that "she cannot support a larger family," or that she desires to "take a summer trip," or may mention what she deems other inconveniences. Otherwise good women think there is no wrong when the abortion is produced during the first two or three months. They are ignorant of the fact that there is life as soon as conception takes place. They are not altogether to blame for this idea. The statutory laws of some States have held that abortion was not an indictable offense unless the operation was performed on a woman who was "quick" with child.

How is this great crime to be stopped? We have no theory to offer for its entire prevention. Much, however, can be accomplished by physicians in imparting to women a knowledge of the deleterious effects of abortion, and the immediate dangers incident to the performance of the operation by the usually ignorant abortionist with his unclean hands and instruments. They should know that few will escape chronic invalidism, and that it is the exception for a woman who has been the subject of a criminal abortion not to suffer from serious pelvic disease. They should be made to know, too, that life begins with impregnation, and that the crime and dangers are as great when the act is done in the early months as when performed later.

OUR VISITORS.

Memphis will have the unusual honor of entertaining two medical societies during the month of December: the Southern Surgical and Gynecological Association on December 6th, 7th and 8th, and the Tri-State Medical Association of Mississippi, Arkansas and Tennessee on December 20th, 21st and 22d.

The program for the Southern Surgical and Gynecological Association was published in our last issue, and is of great interest. Nearly all of the prominent surgeons and gynecologists of the South and middle West will be in attendance, and some from a greater distance, notably Drs. Howard Kelly of Baltimore and Joseph Price of Philadelphia, whose names suggest so much in connection with perfection in abdominal surgery. It is expected that these gentlemen will operate during the meeting at the City

Hospital. Besides the scientific proceedings, a reception will be tendered the society by Dr. R. B. Maury at his residence on the evening of the first day, and on the second evening the Memphis Medical Society will receive in honor of the association at the Gayoso Hotel. The Gayoso will be the headquarters and the meetings will be held in the large parlors.

The Tri-State Medical Association is our annual and welcome guest. In no other way can we watch the advance of medical men and medical thought in our own locality so well as in this society's meetings. It is gratifying to note each year the increase in attendance, the higher order of the papers presented, and the improvement in the character of the discussions. This year the meeting will last three days and nights, an increase of one day over previous meetings being necessitated by the number of papers promised. Aside from the medical interest, it will be refreshing to attend a meeting presided over by so able a parliamentarian as Dr. Happel, the president, whose presence will insure the transaction of business with a neatness and despatch not always observed on these occasions. The meeting will be held at the Gayoso Hotel.

We hope that all of the physicians in our neighborhood will avail themselves of the opportunity to attend one or both of these meetings. A full report of both will be found in the LANCET for January.

THE MEMPHIS LANCET, THE DAILY PRESS AND THE NATIONAL QUARANTINE.

There has never been any wavering on the part of the LANCET in its devotion to a national quarantine. Opinions may differ as to whether it is better to build up a new Department of Public Health or to develop one from the existing Marine Hospital Service, but there can be no doubt as to the advisability of the government assuming control of the whole matter, both coast and interstate. One of the daily papers has seen fit to oppose the idea of a national quarantine as applied to interstate matters, and attempts to support its views by quoting an editorial from the LANCET of October on "The Quarantine Question." In that editorial appears the following: "Yellow fever should be kept out of this country by a maritime quarantine under government control. When for lack of, or in

spite of such a system, fever appears," etc. The above was not written on the question of government control at all, but as a protest from a medical source against the plan which another daily paper was then advocating, of removing our quarantine restrictions entirely. We still believe that yellow fever should and could be "kept out of this country by a maritime quarantine under government control," but that was not done, and we were confronted with a condition to meet, not a theory to discuss. We did not think it necessary to say at that time that the government authority should extend beyond the coast. We were discussing what was best for Memphis to do when it was left to her to protect herself without aid from any source. The problem was satisfactorily solved, but we would avoid the necessity of solving it again.

Our assertion that the conditions in Memphis are such as to render a spread of fever likely if it is introduced here when the weather is favorable to its development, and that no amount of sewers can wholly change that, is disputed by another daily paper. In spite of their quotations to the contrary, the opinion we hold is that of the majority of competent epidemilogists and yellow fever experts, and is decidedly the safest working plan for Memphis to follow.

CHANGES IN THE LANCET STAFF.

We regret to chronicle the resignations of Dr. E. E. Haynes and Dr. J. H. Venn from our editorial staff. Their efforts in behalf of the journal have been of material assistance in bringing the LANCET so prominently to the front, and we are sure that our readers, as well as ourselves, will be sorry to hear that other engagements have rendered their resignations necessary.

THE MEMPHIS LANCET PRIZE.

We would like to remind the members of the Memphis Medical Society of the LANCET's offer of a prize published in a former issue. A few papers have been entered, but we expect many more.

REPORTS OF SOCIETIES.

MEMPHIS MEDICAL SOCIETY.

STATED MEETING, OCTOBER 18, 1898. DR. T. J. CROFFORD, President.

Dr. J. L. Minor read a paper entitled *Learning to See at Forty. First With One Eye, Later With Both.* The paper was a recital of the case of a man aged 40, born with cataracts in both eyes. His vision was limited to perception of light, but he could do all kinds of farm work, trade horses, hunt, etc., with great facility. He could tell colors by touch and could tell the points of the compass readily. He was perfectly healthy otherwise; was married and had five children. Removal of one of the cataracts was followed by a smooth recovery. Color perception by sight was promptly manifested, but appreciation of form, numbers and size more slowly acquired by education. His method was to look steadfastly at the object, close his eyes and imagine how it would feel. A year after the first operation the other eye was operated on with an equally good result. Binocular vision was obtained at once, and with it the power to estimate distances, etc., which was but poorly done with one eye. The case was an interesting physiological and psychological study, with bearing on many points in physiological optics.

The visual centers usually fail to develop in persons whose eyes are removed early in life, and it might be thought they would do so in this patient. Dr. Minor thought the retention of light perception in this patient had been sufficient to sustain the integrity of the visual centers.

Dr. E. C. Ellett had seen the patient while under Dr. Minor's care, and was very much interested in the full report. He had observed a somewhat similar case under Dr. Harlan's care at the Wills Eye Hospital in Philadelphia. In this case, however, the operation was performed when the patient was about 5 years old. The operations were successful, but when he left the hospital the little boy had not acquired useful vision, and still relied on the sense of touch to recognize objects.

The promptness with which this man's sight returned after such long disuse is opposed to that theory of squint which attributes the

amblyopia of a squinting eye to the disuse which follows when the eye turns in. In these cases Dr. Ellett has seldom seen any improvement of vision in the squinting eye brought about by exercise or other means, which observation is also against the theory of the amblyopia being from disuse.

Dr. G. G. Buford thought that Dr. Minor's patient must have seen early in life and had his visual centers developed then.

Dr. Wm. Krauss suggested that a sort of vicarious vision existed, or rather impressions received by the fingers, etc., were translated by the visual centers, which were thus kept active.

Dr. B. F. Turner recalled seeing the patient at the hospital and noticed that a year after the first operation he had, by becoming less dependent upon the sense of touch, allowed the delicacy of that sense to depreciate, while the development of the visual sense had not proportionately increased. This condition would be overcome in time.

Dr. Minor expressed his belief that the amblyopia of squinting eyes preceded the squint, and stated that he had never seen binocular vision restored to a person's eyes after he had squinted. The eye of an infant first appreciates light and later form, and lastly color. This man's color sense and color fields were found to be normal as soon after the operation as it was possible to test them.

Dr. Ellett read a paper on *Holocain, a New Local Anesthetic, with a Report on Its Use in Eye Surgery.* From its use in eleven cataract operations, twelve iridectomies, three advancements of ocular muscles, two paracentecides corneæ, and several tenotomies, pterygia, chalazia, Knapp's roller operations, capsulotomies, symblepharon, and removal of foreign bodies from the cornea—a total of about one hundred observations—holocain was found to be a prompt, stable and reliable anesthetic in about one minute. *Its solution is antiseptic*, unaltered by boiling, and keeps indefinitely. It is not dangerous unless used hypodermatically, when it is said to cause clonic convulsions. It is soluble in hot water, and must be prepared in a porcelain vessel, since contact with glass while hot decomposes it.

Dr. Minor had used holocain a few times when it first came out, but was not favorably impressed with it, and had abandoned it.

Dr. M. Goltman reported a case of probable *Cerebral Syphilis.* The patient, a man, age 31, complained of spells which interfered

with speech and to a slight extent with the functions of his right leg and arm. Family and personal history to four years ago have no bearing on the present trouble. Four years ago he contracted syphilis and had all the classical symptoms. He went to Hot Springs three years ago, and took much iodide and mercury, resulting in salivation and loosened teeth. Outside of some pustular copper-colored pimples, which are present on his back, he presents no external manifestations of syphilis.

Four weeks ago, about 5 P.M., while talking to some friends, and after working in his store all morning, he felt a roaring in the head which was general, coming on in waves as if he had taken quinin, and his speech became affected to the extent that he was *able to articulate* but unable to say what he desired, knowing at the same time that he was not accomplishing his purpose. After this his *right leg* became numb as if asleep, beginning in the foot. He worked the toes vigorously to overcome the numbness, in spite of which it extended up the leg, making it feel as if asleep. He then felt a peculiar, indefinable feeling in his arm and hand, and found himself unconsciously working the fingers to overcome some impending trouble, as it were. He distinctly noticed that the fingers and hand (right) became blue; there was no weakness in arm or leg; in fact he felt as if he wanted to walk around, and felt better when doing so. He had quite a few of these attacks in the last four weeks. They began almost imperceptibly at first, but are becoming harder right along, until last Thursday night he had an attack exactly the same as the first described, which lasted fully three-quarters of an hour, and which he overcame after a hard struggle by force of will. He finds that he can overcome the attacks by force of will if he tries to at the beginning, but that if he gives way to it, it rapidly increases in severity and lasts a long time; in fact he feels that it would last indefinitely did he not overcome it. There are no hysterical stigmata and no neurasthenic symptoms. He does not feel sick at the stomach, has no aura, but has a foreboding of evil, being afraid that his mind may give way every time an attack comes on him. He has been having slight attacks almost daily, but has been entirely free for the past three days. There are no headaches, but he had attacks of migraine in years gone by. He has had serious family troubles for several years, but has now been free from them since last April. His busi-

ness is flourishing, but he has been working for years, getting at times not more than two or three hours sleep in twenty-four. He sleeps well, does not dream. Sensation, including taste, normal. Heart normal; pupils react to light and are regular; he stands well with eyes closed; gait is normal; reflexes normal; no clona; pulse, respiration, temperature, bowels, urine and blood normal. The eyes were examined by Dr. Ellett, who reported a congestion of the optic nerves.

The patient was put on iodide of soda.

Dr. Buford said that one of three factors entered into causation of a disturbance of this sort, (1) degenerative changes, (2) nutritive disturbance or (3) the influence of some toxic principles. In Dr. Goltman's case if the trouble had been due to either of the first two, the attacks would not have been under the control of the will. The condition must therefore be of toxic origin, and from the history he thought the poison at work was syphilis, and that energetic antisyphilitic treatment would relieve the symptoms.

Dr. J. H. Reilly reported a case of *Tetanus Neonatorum*. The child was delivered by a midwife and developed tetanus on the ninth day. Dr. Reilly examined the secretion from the umbilicus daily, and never found the clubbed bacillus, but many small bacilli, and some of the long broad ones which are quite characteristic. The umbilicus itself looked normal. The child was treated with chloral and bromides by the rectum, and fed by the rectum, too. The antitetanic serum was not used, because it could not be obtained. The child died on the twelfth day of the disease.

STATED MEETING, NOVEMBER 1, 1898.

Dr. E. C. Ellett presented (*a*) a case of *Secondary Glaucoma* of one year's standing, depending on a detachment of the retina, which antedated the glaucoma two years. The patient was a man of 50, with marked uric acid diathesis, the urine depositing the characteristic sediment, and joint pains being frequent. The glaucoma had been brought on by the dragging of the detached retina on the ciliary body.

(*b*) A case of *Primary Glaucoma* in a young man of 28, a myope. The attack came on the 24th of September. The urine was of double acidity, and specific gravity 1.030. Eserine and massage locally, with citrate of lithia internally, resulted in a complete cure

in less than a month. It was thought advisable to keep the specific gravity of the urine down to 1.020 by the lithia or diluents. The eye has completely recovered. Dr. Ellett mentioned the fact that a recent author* says that "iridectomy or its equivalent is the only treatment for glaucoma," an opinion which this case does not bear out. The eye is certainly well now, though will require watching.

(*c*) A specimen of *Myxomatous Nasal Growth* removed from a boy aged 10. The growth filled the nostril completely from side to side, top to bottom, and vestibule to pharynx. The occurrence of the growth in so young a patient is unusual. The operative measures were described, and the instruments for their proper performance shown.

(*d*) Several specimens of *Adenoid Growths* removed from the naso-pharynx. These growths cause mouth-breathing, mental and physical hebetude, poor development, ear complications, and a characteristic facial expression. From these symptoms the trouble is suspected, and the diagnosis is verified by digital examination. Dr. Ellett thought the condition to be less common here than in many other localities, but he had no good explanation of the fact to offer. He prefers to operate under a general anesthetic, and described the operation, and exhibited the various forceps and curettes used in removing the growths.

Dr. Richmond McKinney agreed with Dr. Ellett as to the relative infrequency of adenoid growths in this locality. He spoke of the fact that Hinkel has collected eighteen cases of death from chloroform anesthesia induced for the adenoid operation since 1892, and hence another anesthetic should be used. Dr. McKinney mentioned a case of mucous polypi with frontal sinusitis, which he has recently seen.

Dr. M. Goltman has given chloroform for Dr. Ellett several times for the adenoid operation, and has seen no ill effect. He spoke of the characteristic facial expression, and the fact that the examining finger always brings away a little blood, and sometimes a portion of the growth.

Dr. G. G. Buford read a paper, the title of which was *Vomiting of Pregnancy Not of Reflex Origin*, in which he stated that, as there was no direct nervous connection between the womb and stomach,

* Dr. de Schweinitz, Hare's "Practical Therapeutics."

there could not possibly be any reflex phenomena manifested by the stomach as result of uterine irritation. The *casus casi* of vomitus gravidarum was pointed out as of autogenous origin, and was probably a leucomainic product, of the urea group, resulting from increased cell metabolism, which, during gestation, takes place in both fetus and mother. This chemical substance acted like apomorphia, by irritating the vomiting center in the floor of fourth ventricle. He gave it as his opinion, based on experience, that chronic gastritis and nephritis were usually present prior to pregnancy in most women who suffered from hyperemesis during the pregnant state. Lavage of stomach, with proper hygiene, were advocated as meeting most fully the therapeutic endeavor.

Dr. Wm. Krauss said that Dr. Buford always spoke understandingly on auto-intoxication, and thought he fully appreciated its connection with the condition under consideration. He had seen one case relieved by lapactic pills (aloin, strychnia and belladonna), and thought that the cathartics and other eliminants were not sufficiently used in the treatment of this condition. In regard to the vaunted oxalate of cerium, he thought it might occasionally act by liberating its oxalic acid in the circulation in contact with the toxic substances, thus decomposing them. Permanganate has been recommended for a similar reason.

Dr. Goltman spoke of the present popularity of eliminative treatment in various disorders. Hemmeter has ascribed this disturbance to a deficient excretion of urea. He has seen enemata of plain or salt water given with benefit, and in a very considerable experience in the Woman's Hospital of Montreal he had seen cases where every method of treatment failed, and it became necessary to empty the uterus.

Dr. Edwin Williams asked if Dr. Buford meant that the induction of abortion was never indicated for the vomiting of pregnancy? He had seen two cases in his hospital work in New York where competent men had failed to relieve the condition and this step was taken.

Dr. B. G. Henning mentioned in this connection three cases in which he had determined to induce abortion on account of uncontrollable vomiting. One case was instantly relieved by a glass of cold salt water. A second was badly frightened by a stove falling on the bed, and ceased to vomit. The third was cured by one

washing of the stomach. He thought most men who had been in practice long could duplicate these experiences. He has seen no constant good from oxalate of cerium or any other drug. He does not know the cause of the condition, but does not think, from his experience, that many of the cases are dependent on a preceding gastritis.

Dr. Buford said the literature of the subject was scanty, and the ideas he advanced were new to him. He knows of no other theory to explain the phenomena. Pregnant women overeat, and take too little exercise, and he thinks the need of exercise and oxygen is the source of the trouble.

Dr. M. Goltman reported three cases of *Acute Congestion of the Kidneys* presenting somewhat anomalous symptoms, and showed several specimens of urine collected on different days, and marking the progress of one of the cases. There was the usual scant and high-colored urine, which contained albumin, a few casts, and red blood cells in all three cases, but pain over the kidneys was only complained of in one case, and in this it was not in the back but in the side and front of the abdomen. The leading symptom in all three cases was marked vesical tenesmus accompanying the passage of urine, which took place ten to twelve times a day, and amounted to a few drams at most for each voiding. One case had been treated for cystitis. Text books dismiss the subject summarily, but Purdy calls attention to the vesical tenesmus in a few words as follows: "Locally, more or less frequency of micturition is present, sometimes with pain, urgency, *and perhaps vesical tenesmus.*" Dr. Goltman said that he had talked the subject over with some medical friends, and this prompted him in bringing the matter before the society.

The treatment should consist of rest in bed, dry hot applications over the kidneys, mild diuretics in the shape of hot drinks and mineral water, and if uremic symptoms are present, as was the case in one of these patients, active elimination through one or all channels is indicated.

Dr. Krauss reported a case of *Malarial Hematuria* which recovered. The man was desperately ill about eight or ten weeks ago, with chills, hematuria paroxysms and uremic symptoms, with a temperature of 106°. He has now regained his weight, the circulation is good, and he passes a large quantity of urine with a low

specific gravity, an expression of diminished function of the convoluted tubules.

Dr. Goltman reported that the case of *Cerebral Syphilis* mentioned at the last meeting was getting along well under the iodide of sodium.

MISSISSIPPI VALLEY MEDICAL ASSOCIATION.

Abstract of the Proceedings of the Twenty-fourth Annual Meeting, Held at Nashville, Tenn., October 11, 12, 13 and 14, 1898.

[CONTINUED.]

Dr. J. Homer Coulter, of Chicago, maintains that the general practitioner should not treat cases of mastoiditis in which the symptoms are well defined, and no one who has not had considerable surgical experience should attempt the Schwartze operation.

Dr. J. A. Stucky, of Lexington, Ky., said that in many cases of necrosis of the malleus he has made a free incision along the posterior superior wall of the canal, curetted the diseased bone away, tamponed the canal lightly with iodoform gauze, and patients have done well without undergoing the radical operation.

Dr. Dudley S. Reynolds laid stress on the importance of instituting constitutional medication in the stage of invasion in cases of mastoiditis.

Dr. L. B. Graddy, of Nashville, called attention to a point not mentioned in the paper—the differential diagnosis between mastoiditis and mastoid periostitis. If cases are carefully observed, there is as much difference between the two conditions as there is between a periostitis of the tibia and an epiphysitis. This differentiation is of paramount importance in the treatment, whether it be medical or surgical.

Dr. J. Homer Coulter, of Chicago, read a paper on *Prophylaxis in Nose and Throat Diseases.* He said that there are many preventable pathological conditions in the nose and throat, and that many of the ordinary diseases of this portion of the anatomy have evoluted into more serious and distinctly different affections, will be admitted without question. Surgery does not cure all conditions, nor does it even prove always a prophylactic blessing. So, also, do local applications and constitutional treatment prove unavailing if universally depended upon. This is due in a measure to the

lack of carefully exacting and eliminative diagnosis. With the development of our knowledge of the physiology of the nose and throat have come also new ideas of the connection between many diseases of those organs and of their relative etiological importance. The impairment to ventilation and drainage is a most important factor, and one usually amenable to surgical treatment. "Taking cold" is not only a most frequent condition, but one of the most susceptible to prophylactic measures. Clothing of the entire body is a factor of paramount importance in prophylaxis. Too much clothing about the head and neck is just as disastrous as insufficient protection. Adenoids, polypi, spurs, exostoses, deviations, deflections and sensitive areas are each amenable to surgical treatment, and demand such interference as soon as recognized. Per contra, too much surgery is quite as disastrous as too much conservatism. The tonsils are the cause of other and reflex pathological conditions as frequently as adenoids. Mouth-breathing should be recognized as a most significant danger signal. Conclusions: Anything which produces an alteration in the normal physiological metabolism of the mucous membrane of the nose and throat; any alteration in the nutrition of the parts; any abnormal variation in functional activity; any considerable change in the histological anatomy, are each and all remedial surgically or otherwise, and are therefore amenable to prophylactic efforts.

Dr. J. A. Stucky, of Lexington, read a paper on *Peritonsillitis, or Quinsy; Cause and Treatment.* (To be published in MEMPHIS LANCET.)

Dr. Thomas Chas. Martin, of Cleveland, Ohio, read a paper on *Complete Inspection of the Rectum by Means of Newer Mechanical Appliances.* (See page 371.)

Dr. John L. Jelks, of Memphis, Tenn., contributed a paper on *The Relation Between the Genito-Urinary Tract and Rectum; In Operations upon the Female, Which Should Receive Priority?* The author champions the assertion that the gynecologist should be as well prepared to remove hemorrhoids and treat an ulcerated rectum as to dissect a cicatrix from the cervix or repair a perineum. The rectal surgeon often finds that although the rectum is involved to such an extent as to be chiefly complained of, the chief source of danger to the patient is a pus tube or some other disease. In other words, to relieve the patient and restore her to health and happiness he must also dissect from the cervix uteri a cicatrix and repair

a lacerated perineum. In another case he may be required to sever an urethral stricture.

Dr. Wm. B. Burns, of Deckerville, Ark., read a paper entitled *Rectal Fistula in the Causation of Ischio-Rectal Abscess.* (To be published in the MEMPHIS LANCET.)

Dr. George D. Kahlo, of Indianapolis, followed with a contribution on *Hydrotherapy in Stomach Diseases.* (See page 372.)

Dr. Thos. Hunt Stucky, of Louisville, read a paper on *Auto-intoxication of Intestinal Origin.*

Dr. Edwin F. Wilson, of Columbus, Ohio, followed with a *Clinical Report of a Case of Abscess of the Liver.* In speaking of the clinical aspects of abscess of the liver, he called attention to the essentials in diagnosis, and dwelt upon the history of the disease, reporting three cases. Of these, the diagnosis was confirmed in two by post-mortem; in the other by aspiration. In all three the abscesses were chronic when the patient came under his observation. In only one of the cases was there a history of dysentery, although in one case scars of healed ulcers were found in the large intestine. In these cases he finds the enlargement of the liver is upward. Hoover has made a diagnosis of abscess of the liver from a friction sound in the axillary line between the eighth and tenth ribs. The essayist has not heard this sound in any of his cases, but this should be borne in mind when making an examination in this region. Two of the cases reported were mistaken for malaria. This mistake can be avoided by the more general use of blood examinations. The absence of plasmodium would settle this at once.

Dr. J. C. Morfit, of St. Louis, read a paper on *The Importance of Early Diagnosis in Surgical Cases.* The diagnosis of a disease ought to be the most attractive feature in the practice of medicine or surgery. It is the foundation on which any plan of treatment is applied. The physician should promptly and exhaustively weigh every indication of cause and effect and apply therapy accordingly.

Dr. George W. Johnson, of Dunning, Ill., read an excellent paper entitled "*Gonangiectomy and Orchidectomy for Hypertrophied Prostate in the Aged.*" Dr. Johnson arrived at the following conclusions:

1. All cases of prostatic hypertrophy should be given at least two weeks of palliative treatment, with rest in bed. The bowels should be kept free; sitz baths; counter-irritation to the perineum;

medicated suppositories for rectal pain; besides douches of nitrate of silver, bichloride of mercury, ichthyol and diluents for the urine, with milking of the prostate every second or third day, together with regulation of diet. Of the cases so treated by him, one in four required no operative interference.

2. If no relief is had from this line of treatment, a thorough and systematic examination should be made for vesical calculi and polypi, as well as structural and malignant disease of the prostate and bladder. Cystitis, acute prostatitis, and prostatic abscess should always be borne in mind. The urine should be frequently examined. In cases of cystitis he is of the opinion that the ureters should be catheterized to more accurately determine the condition of the kidneys. This can now be easily done by the Harris instrument. If by digital examination per rectum, the prostate is found to be enlarged, its approximate dimensions should be noted and urethral measurements taken. The patient should then be as well prepared for operation as possible. If an operation is not especially urgent, two weeks' time is usually sufficient. Having decided upon operative interference, the operator alone must decide upon what operation he will do. Personally, he believes that gonangiectomy or orchidectomy offers less risk to life.

3. Chloroform should be used, as it requires less time and is not so irritating to the kidneys. The operation should consume as little time as possible, for these patients will quickly succumb to long anesthetics and operation. As to time, gonangiectomy or orchidectomy can be done quicker and with less shock than any other operation; there is less liability to secondary infection. Much will depend upon the after treatment. With busy surgeons this point is too often neglected. If herniotomy has not been done and the patient is not asthenic, the shorter the time he is kept in bed the better, for such patients soon go to pieces if confined to bed too long.

4. The time for relief after operation is irregular. In his experience the relief has not been as clearly defined as to hours and days, nor as immediate as in most cases reported. In but two cases has the catheter been required after operation. Enuresis was constantly present in his cases for from one to six weeks after operation. The relief from vesical distress is usually the first sign of improvement, and this is always gradual, not spontaneous.

5. More immediate relief is given to cases of orchidectomy, and the prostate grows smaller and diminishes more rapidly in such cases than where gonangiectomy is done.

6. The kidneys should be carefully watched and supported after operation. Mental symptoms appeared in three of his cases, two of which were most certainly due to renal disease, for when treated for this condition they almost immediately became lucid and have remained so. Residual urine should be measured from time to time.

7. Long-standing and troublesome hernia can be successfully treated in the senile. He had successfully treated eighty-four cases, not one of which has recurred up to this time. Among this number he has six times encountered the condition of congenital with acquired hernia. In five of the cases the acquired sac was outside the congenital one. In one case it was within it. Of this condition he has been unable to find anything in recent works on surgery and anatomy, nor has he been able to find any cases reported. In all of these six cases the hernia had been present almost the lifetime of the patient, but had gradually grown in size, which was undoubtedly the formation of the acquired hernia. He has used formaldine catgut sutures, No. 3, for the buried sutures in all but three of his cases, and in these he used braided silk, which had to be removed one year later. Moist bichloride dressing was always used, and the superficial sutures removed on the fifth or sixth day. In case of orchidectomy no incision was made in the scrotum, and no drainage whatever used. It is his judgment that the less the scrotal tissue is disturbed the better. Bassini's operation was resorted to in all but five cases, in which Fowler's method was used. It seems very surgical to the author, but requires too much time in such cases as he has reported.

8. Cystic degeneration of the testicles was met with in twenty-five cases. These cases usually had chronic hydrocele also, and were always cases with hernia of long duration.

9. When the intestines occupied the scrotum in large mass, they were returned to the abdominal cavity three or four days before the operation. In many instances there were adhesions preventing reduction.

10. Examinations were always made for vesical calculi, but none were found.

11. The somatic condition was greatly improved, and when bilateral orchidectomy was done the patients became obese.

12. If operation is required, preparation of from one to three weeks is made by special diet, whisky, and full doses of strychnine, with a thorough cleansing of the bowels before operation.

13. In cases of herniotomy the patient was kept in bed from three to five weeks, unless very asthenic, with the hope of getting better organic union and thereby minimizing liability to recurrence.

14. In a personal examination of the prostates of 360 men over 55 years of age, the large majority being between 65 and 75 years, he found 186, or $75\frac{4}{9}$ per cent., to have very perceptible enlargement of the prostate. In 65, or $18\frac{1}{18}$ per cent., there was urinary disturbance. In 56, or $15\frac{5}{9}$ per cent., the prostate was so large that it could not be outlined by digital examination per rectum. Of these 56, 14, or 25 per cent., had urinary disturbance constantly, such as dysuria, frequent micturition day and night, rectal and vesical tenesmus, retention at times, with residual urine and cystitis. In 210, or $58\frac{1}{3}$ per cent., the prostate was very perceptibly enlarged; 43, or 20 per cent., had urinary disturbance of a milder degree than those above mentioned. The right lobe was markedly more enlarged than the left in 7, or $1\frac{17}{18}$ per cent. Of the 7, 5, or $71\frac{3}{7}$ per cent., had urinary disturbance. The left lobe was also enlarged in 7, or $1\frac{17}{18}$ per cent., but had urinary disturbance. The middle lobe was slightly enlarged in 5, or $1\frac{17}{18}$ per cent. None complained of vesical distress. The prostate was found to be normal in 44, or $12\frac{2}{9}$ per cent. It was atrophied in 30, or $8\frac{1}{3}$ per cent. Of these 30, 2, or $6\frac{2}{3}$ per cent., had slight enuresis.

It will be noted that this percentage is higher than that given by Thompson and White, but this census is taken from a strictly hospital population. The rather extreme age, and the fact that most of the men have had gonorrhea or syphilis, may account for the high percentage.

The cases he has reported as requiring surgical treatment are not included in this census.

[TO BE CONTINUED.]

PROGRESS OF MEDICINE.

Complete Inspection of the Rectum by Means of Newer Mechanical Contrivances.—Thos. Chas. Martin, of Cleveland (Mississippi Valley Medical Association, Nashville, Tennessee, October, 1898, *Author's Abstract*), exhibited a set of protoscopes which are provided with obturators of peculiar form, an illumination apparatus susceptible of adjustment to an infinite number of positions, and an improvement on the Yale chair which facilitates the placing of the patient in the knee-chest posture without requiring any movement on the part of the patient after he is properly seated on the chair. The improvement consists essentially of an upholstered board attached to the left arm of the chair, and a mechanism controlled by a crank and lever which form a part of the running gear. The anoscope exhibited is an inch and a half (1.27 cm.) in length, and is designed for the inspection of that part of the rectum which is surrounded by the pelvic floor. The protoscope is four inches (10.16 cm.) long, which the essayist claims is of sufficient length to reach into the inflatable rectum, and is not of so great a length as to obstruct a complete view of the rectal chambers and yet is of sufficient length to reach the promontory of the sacrum when the pelvic floor is displaced upward by the proctologist's manipulations. Both of these instruments are seven-eighths of an inch (2.22 cm.) in diameter: this diameter having been determined upon as the result of calibration in many normal ani. The average diameter of the instrument is equal to the degree of painless expansibility of the anus. The obturators have contracted necks, which constitute these instruments ointment applicators. The middle part of the obturator is channeled; this qualifies the instrument as a nozzle for rectal irrigation; because of its contracted neck the obturator may be used as a self-retaining nozzle. The surface of each obturator is fluted in such a manner that it may be used as a two-way irrigator when properly fixed within its tube. The technique of the inspection is as follows: The patient is required to sit on the chair with his legs crossed and his body facing the knee-board which is attached to the left arm of the chair.

The chair-back is changed to the horizontal by a movement which puts the patient into the Sims' posture. The fixed rectum is now examined by means of the short anoscope. After this portion of the rectum is inspected, the chair's lever is extended, its crank turned and the chair tilted to such an extreme degree of the oblique lateral position that the chair-seat is almost perpendicular, and the knee-piece, which is a part of the left arm of the chair, and against which the patient's knees are pressing, is almost horizontal. Now, at a time when the patient is resting easily in a position which is equivalent to the knee-chest posture, the proctoscope is introduced, the obturator withdrawn, and the inspection of the ballooned gut completed. The patient is returned to his feet by executing in the reverse order the several steps of this procedure.

Hydrotherapy in Diseases of the Stomach.—George D. Kahlo, of Indianapolis (Mississippi Valley Medical Association, Nashville, Tenn., October, 1898, *Author's Abstract*), said that in the treatment of diseases of the stomach, water ranks first among all our therapeutical resources. Cold water is more stimulating to the secretions and is a better laxative than hot. Hot water has a greater influence as a diaphoretic, is more soothing to the gastric mucous membrane, is a better solvent and is more generally applicable as a remedial agent. The condition in which the drinking of hot water is attended with the greatest benefit is chronic gastritis, but its use in this way must be limited to those cases in which the motor function is intact. It should be administered in quantities of from eight to sixteen ounces one hour before each meal and at bed time. Should be taken as hot as can be borne with comfort and sipped very slowly. It may be used with almost equal benefit in functional conditions associated with normal motor activity. Mineral waters of feeble concentration have about the same influence as the ordinary potable water, but the effects of the stronger waters are dependent upon their chemical constituents. Acidulous and saline waters are indicated in conditions in which there is diminished secretion, as are also alkaline waters in small quantity. The stronger alkaline waters are most useful in hyperacidity and gastric ulcer. Sulphated waters are of benefit in the treatment of constipation. Lavage is indicated in the conditions in which the drinking of water is contra-indicated. In dilatation

it is a sovereign remedy. Weak salt solutions are to be recommended when there is diminished secretion and bicarbonate of soda solutions in hyperacidity. The best means for the employment of antiseptics is by the gastric spray, as there is less danger from absorption. Externally, cold applications are indicated in acute gastritis and in the control of hemorrhage and vomiting. Hot applications should be employed in gastralgia, hyperesthesia and chronic gastritis. The Scottish douche is of benefit in neurotic conditions. The essential factors governing a successful hydrotherapy are an exact diagnosis, a thorough knowledge of the causative influences and of the effects of the remedial agent, as also the confidence and coöperation of the patient.

The Early Diagnosis of Carcinoma of the Uterus.—Dr. Thos. S. Cullen, of Baltimore, (Tri-State Medical Society, Birmingham, Ala., October, 1898, *Author's Abstract*) spoke first on the normal histological appearances of the uterine mucosa:

(*a*) The squamous epithelium covering the vaginal portion of the cervix; usually ending at the external os, but not infrequently extending to a point midway up the canal, or even as far as the internal os.

(*b*) The cervical epithelium which usually extends from the external to the internal os. This is very high and cylindrical; its nuclei are usually situated on the basement membrane, and are triangular, oval or elongate. The form appears to depend upon the amount of secretion contained in the cell. The cell protoplasm is very pale and tends to imbibe the hematoxylin stain instead of eosin. The racemose glands of the cervix may be looked upon as branching reduplications of the surface epithelium; their cylindrical epithelium is identical and continuous with that covering the surface of the canal. The stroma around the cervical glands is usually rather dense, but offers nothing very distinctive.

(*c*) The uterine mucosa commences at the internal os and lines the entire uterine cavity. It is usually 2–4 mm. thick, is smooth, and has a surface covering of one layer of cylindrical epithelium. The cells are barely two-thirds as long as those of the cervix, have oval nuclei, which are situated some distance from the base of the cell or lie near the middle, and contain a protoplasm which takes the eosin stain; attached to their surfaces are cilia. Thus the cer-

vical epithelium differs in almost every particular from that of the body. The uterine glands are tubular and may branch slightly near the muscle; they are lined by one layer of epithelium, continuous with and similar to that covering the surface. This epithelium usually contains several nuclear figures. The tissue between the glands we usually call the stroma of the mucosa. The nuclei of this are oval and vesicular, the cells are usually spindle-shaped, and can be studied to best advantage where they are separated from one another as in edema. A few small round cells are regularly found between the stroma cells. The blood supply of the stroma is rather interesting; the arteries are invariably in small bunches of from three to eight, and are surrounded by considerable connective tissue. The veins are large and merely have their endothelial lining separating them from the stroma.

The classification of carcinoma has been rather complicated, and, to a great extent, indefinite. From a systematic examination of over ninety cases in the Johns Hopkins Hospital, and from a critical review of the literature, the author has made the following simple classification:

(*a*) Epithelioma of the cervix.
(*b*) Adeno-carcinoma of the cervix.
(*c*) Adeno-carcinoma of the body of the uterus.
(*d*) Epithelioma of the body of the uterus (rare).

From this classification it is readily seen that varieties (*a*), (*b*) and (*c*) correspond to the three varieties of epithelium found in the uterus and which have already been described.

The epithelioma of the cervix commences in the squamous epithelium, and starts as small papillary outgrowths and finger-like or branching ingrowths. It is just when the disease is in its earliest stage that we wish to recognize it. Given a patient over 35, complaining of a slight bloody or watery discharge between menstrual periods, insist on making or having an examination made. If the cervix show localized hardness, blue on slight manipulation, and have little masses springing from its surface, the diagnosis is fairly certain, but if one be in doubt, a small wedge-shaped piece should be cut out of the suspicious area and examined at once.

In adeno-carcinoma of the cervix the process is much more insidious, the patient perhaps complaining of a slight bloody or watery discharge. On vaginal examination frequently nothing

can be detected. The only accurate means of diagnosis is by the aid of the microscope. In adeno-carcinoma of the cervix the growth may commence from the epithelium lining the canal, as beautifully shown in one of Cullen's drawings; here the surface epithelium had rapidly proliferated and formed large masses of cells which were, to a great extent, arranged as new glands, but as yet there was no connective tissue between the glands, a condition that speaks conclusively against Ribbert's recently advanced view, that the carcinoma is primarily due to a ripping off of epithelium by the underlying stroma.

Adeno-carcinoma of the body of the uterus is much more frequent than was formerly supposed. In its early stages the symptoms are usually only a slight bloody or watery discharge, and on bimanual examination one finds the uterus little, if any, enlarged, hence without further aids in diagnosis the true condition could not be accurately determined. Before curetting such a uterus it is well to bear in mind that while at times the mucous membrane of the entire cavity is involved in the new growth, frequently the process is limited to one wall or even to a small portion of one wall, hence if the operator curette at random and not in a systematic way, the diseased area may not be disturbed at all, only normal tissue from the surrounding portions being removed; it is, therefore, always wise to thoroughly curette the walls anteriorly, posteriorly and laterally. If carcinoma be present the curettings are usually abundant, the surface of the mucosa has a branching or tree-like appearance instead of the normally smooth and velvety covering, and the tissue is very friable. Histologically the carcinoma is very readily diagnosed from even the smallest amount of tissue, and then from the characteristic gland formation. The widespread idea that the glands must be seen penetrating the muscle is erroneous, as not in one case out of ten do we find uterine muscle in the scrapings, and yet the diagnosis is clear.

Epithelioma of the body of the uterus is exceedingly rare, probably not more than six or seven cases having been reported. This variety is identical with epithelioma of the cervix and it is most likely due to the squamous epithelium having extended abnormally far upward.

The clinical phenomena of carcinoma of the uterus are not satisfactory, so many of those present being common to other

diseases. The presence of a bloody or watery discharge should always arouse one's suspicion and stimulate him to make an immediate diagnosis.

Prognosis. Adeno-carcinoma of the cervix is undoubtedly the most malignant. Epithelioma of the cervix is next in the category, while adeno-carcinoma of the body is the most amenable to treatment.

The treatment in the early cases is of course complete enucleation. It is interesting to note the advance in this line. First we had the amputation of the cervix as practiced by Schröder and others, then hysterectomy as recommended by Freund in 1878; later a distinct advance was made when Pawlik, in 1889, recommended catheterization of the ureter preparatory to removing the uterus. This was not, however, adopted by the profession at large, and it remained for Kelly, who conceived the idea independently, to establish it as a routine procedure. Recently a further step has been taken. This was independently advocated by Reis, Clark and Rumpf. The operation as performed by Clark and Reis leaves little to be added in this direction, and yet where the disease has advanced far, none of these operations are of permanent benefit. Our only hope lies in the early diagnosis.

Diagnostic and Therapeutic Uses of Tuberculin.—Chas. W. Aitkin, of Flemingsburg, Ky. (Mississippi Valley Medical Association, Nashville, Tenn., October, 1898, *Author's Abstract*), deplores the fact that diagnostic tyros have retarded medical science by refusing to avail themselves of every possible means whereby accurate diagnosis may be made. He hopes, by this paper, to induce general practitioners to avail themselves of the diagnostic and therapeutic value of tuberculin.

He recites the characteristic reaction following test doses of tuberculin in tuberculous disease of the bladder, of bone and other tuberculous conditions, and extols its virtue as a differential diagnostic agent in cases of marked syphilis resembling obscure tuberculosis.

He calls attention to the fact that latent tuberculosis so frequently exists in cases that have not been diagnosed, oftentimes where it has not been suspected, and that this preparation is of great value in clearing up these cases; he does not, however, claim that all such

cases are suitable ones for the use of tuberculin therapeutically, but in all cases of suspicious tubercular disease, or where that peculiar condition exists which leads us to believe that this condition may be a remote cause, he recommends the use of test doses of tuberculin to clear up such diagnosis.

He refers to cases of chronic cystitis persisting after medical and surgical treatment, which gave a decided reaction after test doses of tuberculin. The cases referred to had been benefited by the use of this preparation, administered therapeutically, but they were of too recent date for him to draw any conclusions as to the permanency of the relief given. He notes that in pulmonary tuberculosis, both in cases confirmed by microscopy and in those in which microscopic examinations were negative, that tuberculin injections in diagnostic doses brought about the reaction peculiar to the administration of this preparation.

In the diagnostic use of tuberculin he recommends to give from 5 to 8 mg. daily, or bi-daily, for two or three days; if no reaction follows, he concludes that no tuberculosis exists. Therapeutically he recommends $\frac{1}{12}$ to $\frac{1}{8}$ mg. as the minimum dose for beginning, gradually increasing it daily, or bi-daily, from $\frac{1}{30}$ to $\frac{1}{20}$ mg. at each hypodermic injection; he uses this upon an average of one week, and then allows a rest of about the same period when he begins it again, starting this time with the maximum dose of the preceding period of administration; he keeps up this plan of treatment for one or two months. He does not think at present that the therapeutic value of tuberculin is at all equal to its value as a diagnostic agent.

He refers to one case of nephritis followed by a serous pleuritic effusion as having occured in his practice. He has the solution for injection prepared fresh every few days, using $\frac{1}{2}$ per cent. of carbolic acid solution as the menstruum; he urges the necessity of perfect asepsis, and concludes: First. That tuberculin is of great value in early diagnosis of tuberculosis. Second. It is of equal value in differentiating between tuberculosis and other diseases which closely simulate it. Third. In beginning tuberculosis it sometimes is a curative agent. Fourth. In local tuberculosis of the skin and glands the diseased condition is usually relieved.

A Few Practical Points in the Treatment of Posterior Urethritis.—Dr. A. Ravogli, of Cincinnati (Mississippi Valley Medical Association, Nashville, Tenn., October, 1898, *Author's Abstract*), concluded by stating that his purpose was to give to the general practitioner an easy and handy method of treating posterior urethritis, in order to avoid late troublesome consequences. He recapitulated in brief the principles of the treatment of posterior urethritis as follows:

1st. Irrigations by the Janet method in a recent case of gonorrhea will in many cases prevent posterior urethritis.

2d. Irrigations with the recurrent catheter, with permanganate of potassium, followed by injections of protargol, will cure in a relatively short time a case of subacute posterior urethritis without complications.

3d. When chronic posterior urethritis, lasting for a long time, has caused infiltration of the submucous tissues, the application of a sound with ichthyol salve gives the desired results.

So-called Autophony (That is, Pathologic Resonance of One's Own Voice).—Brunner, of Zurich (*Annals of Otology, &c.*, August, 1898), says that autophony is due to deficient closure in the pharyngeal portion of the eustachian tube. The sensation is as if one spoke with his head in a barrel. The trouble may be objectively perceptible, especially if one-sided. Nearly all the patients have chronic nasal catarrh; hence we might speak of a catarrhal autophony in contradistinction to that produced by cicatrices and muscle-spasm. We have still something to learn regarding the conditions producing this symptom. The resonance involves only one's own voice and respiration, and not noises and tones coming from without. The prognosis is good. The treatment is anti-catarrhal, with injections of zinc sulphate into the tube.

[These patients can be made more comfortable by supporting the drum with an artificial tympanum, or even a pledget of cotton. Occlusion of the meatus cannot cause this symptom, and the support gives temporary, and sometimes permanent, relief.—E. C. E.]

THERAPEUTIC NOTES.

SWEATING HANDS:

℞ Borax,
Acid salicylic, āā grs. 225
Boric acid, grs. 75
Glycerinæ,
Dilute alcohol, āā mins. 900
M. Sig.: Rub in three times a day.

SCABIES:

℞ Sulphur sublimat.,
Picis betulini, āā ℥ ss
Cretæ præporat., gr. xl
Saponis viridis,
Adipis, āā ℥ i
M. Ft. ungt. Sig.: External use.

FIRST STAGE OF BRONCHITIS:

℞ Potassii citrat., ℥ ss
Syr. ipecac, f℥ ss
Apomorph. hydrochlor., gr. ijss
Suc. lemonis, f℥ i
Aquæ, q. s. ad., f℥ iij
M. Sig.: Teaspoonful every 3 hours.

CONSTIPATION:

℞ Aloes, gr. 30
Resin jalap,
Resin scammony,
Turpeth. root, āā gr. 15
Ext. belladon.,
Ext. hyoscyam., āā gr. 2.3
Med. soap, q.s.
M. Ft. 50 pills.

CHRONIC BRONCHITIS:

℞ Apomorphinæ hydrochlor., gr. ss
Syr. prun. virg., f℥ ii
Syr. picis liquidæ, f℥ iv
M. Sig.: Tablespoonful 3 times a day.

ACUTE DIARRHŒA:

℞ Bismuthi subnit., ℥ i
Creosoti, m vi
Morphinæ sulph., gr. ij
M. Ft. chart No. xxiv.
Sig.: One every four hours.

INHALATION FOR BRONCHIAL COUGH:

℞ Tr. iodi. co., f℥ iij
Tr. conii, f℥ i
Spt. chloroformi, q. s. ad., f℥ i
M. Sig.: Inhale 10 drops from boiling water for 10 or 15 minutes.

℞ Creosoti,
Alcoholis,
Chloroformi, āā f℥ ss
M. Sig.: 20 or 30 drops on an inhaler.

FOLLICULAR TONSILLITIS:

℞ Acid trichloracetic, gr. 1½
Iodine, gr. 3¾
Potass. iodid., gr. 7½
Glycerine, gr. 82½
Aq. dest., gr. 150
M. Sig.: Apply.

PILL FOR DROPSY:

℞ Pulv. digitalis,
Massa. hydrarg.,
Pulv. scillæ, āā gr. i
M. Sig.: One pill three times a day.
Niemeyer.

PILL FOR PHTHISIS:

℞ Pulv. digitalis, gr. i
Quin. sulph., gr. i
Pulv. opii, gr. ⅙
M. Sig.: One pill three times a day.
Niemeyer.

PILL FOR ANEMIA AND CHLOROSIS:

℞ Potassii carb.,
Feori sulph. exsic., āā gr. ij
M. Sig.: One pill three times a day.
Niemeyer.

BURNS:

℞ Lanolin, 10
Adipis benz., 20
Aq. calcis, 30
M. Sig.: For external use. *Unna.*

NEWS AND NOTES.

Dr. A. G. Sinclair has returned, after an absence of nearly three months.

The *Philadelphia Polyclinic* (weekly) will be merged into the *Philadelphia Medical Journal*, on January 1, 1899.

We welcome the *Texas Clinic* (Dallas) to the field of medical journalism. The number we have received is very creditable.

Dr. A. O. J. Kelly has resigned the chair of Adjunct Professor of Pathology in the Philadelphia Polyclinic on account of press of other duties.

The meeting of the Third Pan-American Medical Congress will be held in Caracas, Venezuela, in December, 1900, instead of December, 1899, as originally appointed.

The Memphis Hospital Medical College opened on November 1st, with an attendance of 200, which is very flattering. The opening address was delivered by Dr. T. J. Crofford, Professor of Physiology.

It is said that Dr. John Guiteras will resign the chair of Pathology in the University of Pennsylvania to accept the chair of Medicine in the University of Havana. Dr. Guiteras is a Cuban and a prominent member of the Cuban junta.

Dr. F. M. Rumbold, of St. Louis, has resigned the secretaryship of the Western Ophthalmologic and Oto-Laryngologic Association, owing to press of military duties, and Dr. T. A. Woodruff, of Chicago, has been appointed to succeed him. The next meeting will be held in New Orleans, February 10 and 11, 1899.

The West Tennessee Medical and Surgical Association held its winter session in Bolivar, on November 17th and 18th. The meeting was small, as the winter meetings usually are, but was very interesting, and the hospitality of the Bolivar people rendered the stay delightful. Memphis was represented by Dr. Wm.

Krauss, the President, Dr. B. F. Turner, who delivered the address on Medicine, Dr. M. Goltman and Dr. E. C. Ellett, who contributed papers, and Dr. J. H. Venn. The next meeting will be held in Jackson, in April.

The National Quarantine Convention was held in Memphis on November 17th and 18th. The resolutions offered by the committee and adopted by the Convention were as follows:

"*Resolved*, 1, That there be established, on a broad and comprehensive basis, a National Bureau of Public Health in the Department of the Treasury of the United States; that the administration of all the public health functions now exercised by authority of the United States be placed in charge of this Bureau.

"*Resolved*, 2, That the sanitary authorities and commercial interests of the several States of the Union be brought into immediate relations with the Bureau, and be given a due share in the power and responsibilities of the Central Board through the agency of an Advisory Council, consisting of one member from each State, to be appointed by the authorities of the several States."

The future will show if any practical good can be derived from the remedy proposed by the Convention. Meanwhile, the commercial interests of the country should awake to the importance of exerting their influence upon Congress to do what is proper for their protection.

Notice. — The Chemist and Bacteriologist of the Board of Health will make the following examinations, free of charge, for the physicians of the city: Microscopical examination of sputum from cases of suspected tuberculosis; microscopical and bacteriological examination of blood for plasmodium malaria; Widal-Johnson's blood test for typhoid fever; Archinard's blood test for yellow fever; urinalysis, when urine is brought with blood for plasmodium malaria, or to be tested for yellow fever. For the convenience of physicians, sterile swabs, slides, and sputum vials will be kept by the Board of Health, at the following stations, and when material for examination has been collected, they should be returned immediately to the laboratory of the Board of Health. Stations: Crego, C. H., No. 645 Shelby Street; Fortune, Ward & Co., No. 279½ Main Street; Knox, M. H., No. 50 N. Second Street; Monnier, Ernest, No. 426 Main Street; Renkert, A. & Co., No. 215 Main Street; Robinson, J. S., No. 288 Second Street; Treherne, J. C., Vance and Hernando Streets.

MARCUS HAASE, M.D., Secretary. HEBER JONES, M.D., President.

BOOKS AND PAMPHLETS RECEIVED.

Diseases of the Eye. By Edward Nettleship, F.R.C.S., Ophthalmic Surgeon at St. Thomas Hospital. Revised and edited by W. T. Holmes Spicer, M.A., M.B., F.R.C.S., Ophthalmic Surgeon to the Metropolitan Hospital, and to the Victoria Hospital for Children. Fifth American from the sixth English edition, with a supplement ot "Color Blindness." By Wm. Thomson, M.D., Emeritus Professor of Ophthalmology in the Jefferson Medical College of Philadelphia. Handsome 12mo. of 521 pages, with 2 colored plates and 161 engravings. Cloth, $2.25. Lea Bros. & Co., Publishers, Philadelphia and New York, 1897.

A Textbook of Practical Therapeutics, with Especial Reference to Application of Remedial Measures to Disease, and Their Employment upon a Rational Basis. By Hobart Amory Hare, M.D., Professor of Therapeutics and Materia Medica in the Jefferson Medical College of Philadelphia. With special chapters by Drs. G. E. de Schweinitz, Edward Martin and Barton C. Hirst. New (seventh) edition. In one octavo volume of 770 pages, illustrated. Cloth, $3.75; leather, $4.50 net. Lea Bros. & Co., Philadelphia and New York.

An Atlas on Syphilis and the Venereal Diseases. By Prof. Franz Mracek, M.D., of Vienna. Edited by L. Bolton Bangs, M.D., Consulting Surgeon to St. Luke's Hospital and the City Hospital, New York; late Professor of Genito-Urinary and Venereal Diseases, N. Y. Post-Graduate School and Hospital. With 71 colored plates. Philadelphia: W. B. Saunders. Price, $3.50 net.

A Manual of Otology. By Gorham Bacon, A.M., M.D., Professor of Otology in Cornell University Medical College, N. Y. With an introductory chapter by Clarence J. Blake, M.D. 400 pages, with 109 engravings and 1 colored plate. Cloth, $2 net. Lea Bros. & Co., Publishers, Philadelphia and New York.

Internal Medicine and Clinical Diagnosis. By Dr. Christfried Jakob, of Erlangen. Authorized translation from the German. Edited by Augustus A. Eshner, M.D. W. B. Saunders, 925 Walnut street, Philadelphia, 1898. Price, $3.

An American Textbook of the Diseases of Children. Edited by Louis Starr, M.D., of Philadelphia. Assisted by Thompson S. Westcott, M.D. Published by W. B. Saunders, 925 Walnut street, Philadelphia, 1898. Price, $7.

An American Textbook of Gynecology. Edited by J. M. Baldy, M.D. Published by W. B. Saunders, 925 Walnut street, Philadelphia, 1898. Price, $6.

A Textbook of Pathology. By Alfred Stengel, M.D., of Philadelphia. W. B. Saunders, 925 Walnut street, Philadelphia. Price, $4.

The Physician's Visiting List for 1899. Philadelphia: P. Blakiston's Son & Co. Price, $1.

The Use of Nitrate of Silver in the Pharynx. By Lewis S. Somers, M.D., of Philadelphia. (Reprinted from the *Medical and Surgical Reporter*, November 21, 1896.)

Tuberculosis of the Tonsils, Pharynx and Larynx. By Lewis S. Somers, M.D., of Philadelphia. (Reprinted from the *Medical and Surgical Reporter*, May 29, 1897.)

Blennostasin. By Lewis S. Somers, M.D., of Philadelphia. (Reprinted from the *Medical and Surgical Reporter*, March 31, 1898.)

The Effect of Hypertrophy of the Inferior Turbinal on the Nasal Septum. By Lewis S. Somers, M.D., of Philadelphia. (Reprinted from *University Medical Magazine*, July, 1898.)

Membranous Rhinitis. By Lewis S. Somers, M.D., of Philadelphia. (Reprinted from *University Medical Magazine*, August, 1896.)

Traumatic Perforation of the Membrana Tympani. By Lewis S. Somers, M.D., of Philadelphia. (Reprinted from *The Philadelphia Polyclinic*, March 6, 1897.)

The In- and Exhaler. By Chas. Denison, A.M., M.D., of Denver. (Reprinted from the *Medical Record*, February 10, 1894.)

New Uses of the In- and Exhaler. By Chas. Denison, A.M., M.D., of Denver. (Reprinted from the *Dietetic and Hygienic Gazette*, June, 1897.)

Should the General Practitioner Receive a Fee for Referring Cases to the Specialist? By Melville Black, M.D., of Denver. (Reprinted from *The Colorado Medical Journal*, July, 1898.)

How to Get Rid of the Refracting Optician, Doctors of Refraction, etc. By Melville Black, M.D., of Denver. (Reprinted from *The Colorado Medical Journal.*)

Crescentic Astigmatism. By Norburne B. Jenkins, M.D., of Knoxville. (Reprinted from the *Medical Record*, July 9, 1898.)

A Study of the Diagnosis, Etiology and Treatment of Tabes Dorsalis, with Special Reference to Precocious Locomotor Ataxia and the Argyll-Robertson Symptom. By F. Savary Pearce, M.D., of Philadelphia. (Reprinted from the *Therapeutic Gazette*, Oct. 15, 1898.)

A Bridle for the Control of Mouth Breathing. By Norburne B. Jenkins, M.D., of Knoxville. (Reprinted from the *Medical Record*, September 10, 1898.)

Senile Epilepsy, with Report of Four Cases. By Chas. L. Allen, M.D., of Washington. (Reprinted from the *Medical News*, March 5, 1898.)

Acute Hemorrhagic Encephalitis. By Chas. Lewis Allen, M.D., of Washington. (Reprinted from *Philadelphia Medical Journal*, 1898.)

The Aseptic Animal Suture—Its Place in Surgery. By Henry O. Marcy, A.M., M.D., LL.D., of Boston. (Reprinted from the *Journal of the American Medical Association*, August 20, 1898.)

Scar Tissue in the Pharynx, Following Scarlatina and Complicating Adenoid Vegetations. By Carle Lee Felt, B.A., M.D., of Philadelphia. (Reprinted from *Laryngoscope*, August, 1898.)

Some Severe Cases of Tobacco and Quinin Amblyopia. By E. C. Ellett, M.D., of Memphis. (Reprinted from the *Journal of the American Medical Association*, October 1, 1898.)

The Detection of Unsuspected Corneal Changes by Examination with Strong Lenses and Focal Illumination. By H. Gradle, M.D., of Chicago. (Reprinted from *Ophthalmic Record*, September, 1898.)

The Advantage of Physical Education as a Prevention of Disease. By Chas. Denison, A.M., M.D., of Denver. (Reprinted from *Bulletin of the American Academy of Medicine.*)

Metastatic Uveitis in Both Eyes, Causing Blindness, Resulting from an Intense Inflammation of the Nose and its Accessory Sinuses. By Wm. Campbell Posey, M.D., of Philadelphia. (Reprinted from the *New York Medical Journal*, Jan. 22, 1898.)

Hereditary Optic Nerve Atrophy. A Report of Three Cases Representing Members of Three Successive Generations Affected by the Disease. By William Campbell Posey, M.D., of Philadelphia. (Reprinted from *Annals of Ophthalmology*, July, 1898.)

A Review of the Pathologic Conditions Affecting the Lingual Tonsil. By E. C. Ellett, M.D., of Memphis, Tenn. (Reprinted from the *Annals of Otology, Rhinology and Laryngology*, August, 1898.)

An Auxiliary Skiascope. By E. C. Ellett, M.D., of Memphis. (Reprinted from the *Ophthalmic Record*, Nov., 1898.)

Rodent Ulcer of the Lids Occurring in a Patient Twenty-three Years of Age. By E. C. Ellett, M.D., and Wm. Krauss, M.D., of Memphis. (Reprinted from *Annals of Ophthalmology*, Oct., 1898.)

Syphilis. By John M. Batten, M.D., of Pittsburg. (Reprinted from *The Medical Fortnightly*, November 1, 1898.)

BOOK REVIEWS.

An American Textbook of the Diseases of Children. Including Special Chapters on Essential Surgical Subjects, Orthopedics, Diseases of the Eye, Ear, Nose and Throat, Diseases of the Skin, and on the Diet, Hygiene and General Management of Children. By American Teachers. Edited by Louis Starr, M.D., Consulting Pediatrist to the University Hospital, Philadelphia, etc., etc. Assisted by Thompson S. Westcott, M.D., Instructor in the Diseases of Children, University of Pennsylvania, etc., etc. Second edition, revised. Philadelphia: W. B. Saunders. Price, cloth, $7; sheep or half morocco, $8.

This popular and well-known book has undergone an entire revision, and in its second edition will continue to occupy the first place among the books upon the diseases of children. Several new articles have been added, and many of the original papers have been rewritten. The volume has thus been increased in size, and in every way it has been brought up to date. Altogether it is one of the most comprehensive volumes upon its subject that has been issued in the excellent series of textbooks from the same press.

An Atlas on Syphilis and the Venereal Diseases. By Professor Franz Mracek, M.D., of Vienna. Edited by L. Bolton Bangs, M.D., Consulting Surgeon to St. Luke's Hospital and the City Hospital, New York; Late Professor of Genito-Urinary and Venereal Diseases, New York Post-Graduate Medical School and Hospital. A handsome volume, with 71 colored plates. Philadelphia: W. B. Saunders. Price, cloth, $3.50 net.

In this little work the author has filled a long-felt want. While brief, it covers the cases most commonly met with by the general practitioner, and has placed within the reach of all a most practical little atlas. The plates are excellent, and portray admirably the clinical picture. The histories are concise, attention being given to the dates of infection as nearly as possible, and also to the period of incubation—an important practical point in the differentiation of venereal lesions. Among the special good points are the references made to treatment under the various cases, and the time required to produce good results; a number of very good recipes are given at the end of the book. The publishers have produced a neat and handy volume. We consider it an invaluable book for the student and general practitioner, because of its conciseness, small cost and practicality.

Atlas of Methods of Clinical Investigation. With an Epitome of Clinical Diagnosis and of Special Pathology and Treatment of Internal Diseases. By Christfried Jakobs, M.D., Formerly First Assistant in the Medical Clinic at Erlangen. Translated by Augustus A. Eshner, M.D., Professor of Clinical Medicine at Philadelphia Polyclinic, etc. With 182 colored illustrations upon 68 plates, and 64 illustrations in the text. Philadelphia: W. B. Saunders. Price, $3.00.

This promises and deserves to be the most popular of Saunders' atlases. The illustrations are up to the standard of the other atlases. Twenty-two plates are devoted to blood spreads, stained and unstained, illustrative of the various conditions for which blood is examined; also plates on the microscopy of sputum, the microscopy of stomach contents, the chemic color reactions of the gastric juice, urinary deposits, urinary color reactions, pus spreads, and micro-organisms. The balance of the plates are diagrams of percutory projection of viscera in health and disease, in latter case giving

illustrative histories. The other half of the book is largely explanatory of the plates, and is a compend of diagnosis and treatment. The book is an admirable and useful addition to the library of the busy practitioner; it enables him to study the more common laboratory diagnostic methods, the plates serving as guides for the reactions or microscopic pictures to be looked for. Some errors and ambiguities have crept in, as is frequent in first editions. On page opposite Plate 20 it might puzzle some as to what "pepton test" has to do with albumoses, etc. On page 110, from the description of the phenylhydrazin test, one would expect to obtain crystals in the hot solution, whereas it should be cooled. Terms like "over-distillation" could be improved upon. These and like imperfections slightly mar the book.

The Physician's Visiting List for 1899. P. Blakiston's Son & Co., Philadelphia. Price, $1.00.

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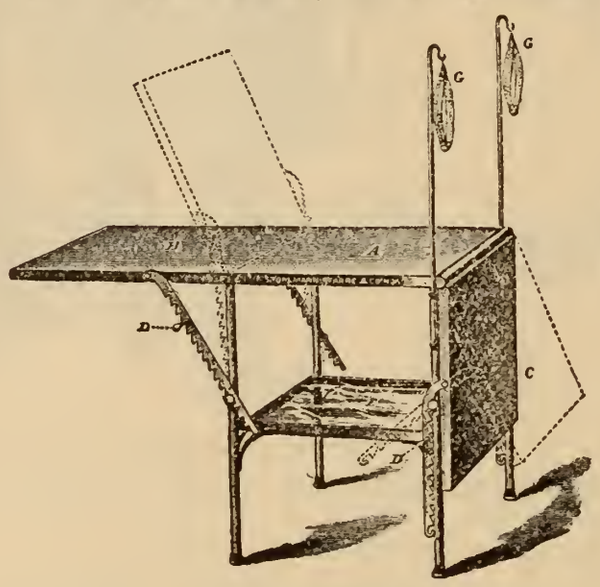

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